DISEASES OF THE RECTUM.

W. H. VAN BUREN.

LECTURES

UPON

DISEASES OF THE RECTUM,

DELIVERED AT THE

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BY

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PREFACE.

THESE Lectures have been written out for publication in deference to the wishes of a number of, perhaps too partial, friends. They comprise the results of a good many years of observation, both in hospital and private practice. The author's design has been to render them simple, intelligible, and practical. If they should prove to be useful, his object will have been fully attained.

104 MADISON AVENUE,
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LECTURES

UPON

THE DISEASES OF THE RECTUM.

LECTURE I.

PRURITUS ANI—ERYTHEMA—HERPES—CHRONIC ECZEMA —ECZEMA MARGINATUM—OXYURIS VERMICULARIS, OR THREAD-WORM — HÆMORRHOIDS: VARIETIES, CAUSES, PATHOLOGICAL ANATOMY — EXTERNAL HÆMORRHOIDS.

As it falls within my province to lecture also upon the *Diseases of the Rectum and Anus*, I propose to give you a rapid review of this subject, completing its practical details as fully as the time at our disposal will permit. I do this with the more pleasure, as these diseases, among the most common and painful you will encounter in ministering to the ailments of humanity, are for the most part relievable by the resources of our science and art; and opportunities have fallen in my way of acquiring a good deal of experience in their management. Naturally, these diseases are unattractive, even re-

pulsive; and those who suffer from them habitually manifest more than usual hesitation in applying to the surgeon; but the positive, and, in some cases, wonderful relief to extreme suffering we have it in our power to afford, invests these complaints with great interest to the medical mind imbued with the true professional spirit. Do not allow false delicacy to deter you from getting a thorough and exhaustive knowledge of these cases, and you will find that you have thus acquired the power of doing a great deal of good.

In popular language, most of the diseases affecting the lower bowel, or its outlet, are called "piles," and naturally, for this is so very common a complaint. I have known pretty much all the diseases of this region to be complained of as "piles," and not only by the careless and uninformed. I was present at a consultation in the case of one of our most learned and able surgeons, suffering from cancer of the rectum, who had persistently called his complaint "hæmorrhoids," and asked for an operation for their removal.

Simple *itching* of the anus, in learned language "pruritus," is a most annoying ailment, which is often very persistent, and capable of rendering life almost unbearable. As you would suppose, it is always a symptom of some other disease, but it is

not always easy to find out this disease, and, by curing it, to get rid of the symptoms. In its simplest form, *Pruritus Ani* is caused by a low degree of inflammation of the delicate integument that lines the anal orifice, from repeated overstretching in the extrusion of costive stools; demanding for its cure a few doses of the conventional sulphur and cream of tartar, or some mild laxative, and local bathing with warm bran-tea, the application of lead-water, or Goulard's cerate.

This form of inflammation, which is not uncommon in certain localities of the body where neighboring surfaces of skin are habitually in contact with each other, is called *Erythema.* New-born infants are not unfrequently affected by it in the flexures of their joints, and very corpulent adults, also.

An eruption of *Herpes*, or "fever blisters," so common about the lips and nostrils after an intermittent, is liable to crop out at the anus, but not often, except in women. This disease seems to affect by preference the immediate neighborhood of the outlets of the body; thus it often breaks out upon the prepuce, where, after its little blisters or vesicles have broken, it presents the appearance of a cluster of soft chancres—for which it is very frequently mistaken. These same appearances at the

anus might possibly—at the Charity Hospital, or among loose women—lead to a similar question, but hardly elsewhere. Herpes soon dries up and gets well; but it might, through neglect, become complicated with erythema in this locality, and persist. Under these circumstances, in addition to the local remedies already mentioned, it will be found useful to keep the irritated surfaces from contact with each other by dusting them with powdered starch, oxide of zinc, or sub-nitrate of bismuth.* If of long duration, more stimulating applications may be required, such as the zinc lotion, or ointment of white precipitate; but, in this case, you should place the patient in a good light, and carefully repeat your inspection of the part. This is a locality where we frequently find *chronic eczema*, with its moist exudation, its exacerbations, and its ferocious attacks of itching after the patient has got warm in bed. Here more systematic treatment is necessary to cure the disease, for it is notoriously obstinate. In addition to your soothing emollients,

* In some persons dry powders do not agree with the skin when irritated, in which case, lotions with glycerine, tannin, and hydrocyanic acid, to allay the itching, may be employed; and picked lint, or a fold of fine linen, interposed between the inflamed surfaces. Gosselin (Nouveau Dict. de Méd. and Chir. Prat.) recommends a glycerole of powdered alum and calomel, in the proportion of ʒ ij of the former, and ʒ j of the latter, to ℥ ij of glycerine. Curling recommends a lotion of borax in infusion of tobacco.

you require stimulants of specific qualities—among which I have found "yellow wash" the best; and chloroform ointment (℥j to ʒj) the most reliable palliative for nocturnal itching. The patient's constitution and habits of life must be studied, for this ailment is often kept up in persons of gouty constitution by the use of alcoholic stimulants. Where the skin has become thickened, the liquor potassæ will do good as a local application, but it must be judiciously used. Cod-liver oil is a good remedy where the nutrition is defective; it has the advantage of keeping the stools soft.

The habit of scratching seems in some cases to keep up this disease, aided, no doubt, by the acid perspiration and irritating character of the secretions and other matters in constant contact with the part. To meet this indication for cure, I have directed a wide-mouthed bottle of chloroform-ointment to be kept within reach at night, and freely applied as soon as the itching comes on. I believe this application never fails to produce its effect in arresting the itching; but, to preserve its efficiency, it must be always well corked, as the chloroform soon evaporates if the ointment is kept in an ordinary box or jar. In the morning the part should be fomented with bran-water, rendered alkaline by the addition of a very little carbonate of pot-

ash—the ordinary pearl-ash in domestic use—and this fomentation should be repeated as often as practicable. After the part has been well dried, I usually direct the patient to place a little wad of *prepared oakum* in contact with the affected integument. This substance keeps well in place by its adhesive quality, and moulds itself to the parts with which it is in contact; it prevents the morbidly-altered surfaces from touching each other, and at the same time keeps them constantly moistened by the tarry exudation it affords, which of itself is a remedy of no little value. I attach a good deal of importance to this simple expedient in the treatment of eczema of the anus, for it happily meets so many of the indications for cure.

You cannot be too careful in the diagnosis of this affection, for I feel confident that it often escapes recognition. Eczema is a multiform disease, assuming various aspects, according to locality and duration. When the skin *around* the anus is involved it is not difficult to recognize the nature of the disease, but, when confined to the orifice itself, the folds of delicate integument often present only a water-soaked appearance, with increased redness at the bottoms of the little gullies between them—sometimes raw cracks extending pretty well within, and these appearances

do not always suggest the idea of eczema. There is an analogous affection of the lips, and also of the external ear-passages, which are equally obstinate.

I have often thought that the internal administration of Fowler's solution of arsenic has aided in the cure of eczema of the anus; and, in women, I should combine it with iron in some form. The use of the Turkish bath twice a week is also an adjuvant of undoubted value.

But there is one point of practice, recently taught us by German dermatologists, that you must never lose sight of: that is, the possibility of the presence of a parasitic plant or insect in the altered epidermis of the affected part, by which the disease and consequent itching are kept up. There is a form of eruption, called, by Von Hebra, "eczema marginatum," with elevated edges and well-defined margin, which has existed in the most obstinate cases of pruritus of the anus I have encountered. If you rub these scurfy margins with a little glycerine thoroughly, and then scrape off a drop with the edge of a dull scalpel, and place it upon a slide under the microscope, you will recognize the spores of a parasitic plant, which is growing like a weed in the diseased scarf-skin.* If you kill this vegetable

* This is known as the *trichophyton* of Malmsten, and the spores of this vegetable parasite, in the shape of minute clusters of highly-

growth, the chronic inflammation of the skin will straightway get well, and to do this use the solution of *sulphurous* acid, as prepared by Squibb, for sulphur is the best of all parasiticides, and this is the best form in which it can be applied. Sop it on two or three times a day, at first diluted with an equal quantity of water, afterward stronger if well borne, and, within a week, the obstinate disease will have taken its departure. I saw a lawyer from the West a few weeks since, who had suffered "more than tongue can tell" for nine years with this disease; it interfered with his professional success, and impaired his general health, which was in other respects good. He had "tried every thing" —but the sulphurous acid.

Remember also that constant irritation of the skin, in some constitutions, will almost invariably establish a chronic "salt rheum." Thus you will often see it affecting the skin in the neighborhood of old varicose ulcers of the legs, caused in the first place by poultices and rancid

refracting vegetable cells, most readily detected in contact with the bulb of a hair extracted from the affected part, have been demonstrated to be always present in the so-called "eczema marginatum" (which, in fact, seems to be hardly distinguishable from the better known *herpes tonsurans*), by Kobner, of Breslau, and Pick, of Prague. For an exhaustive review of the German literature of this subject, by Dr. Keyes, see *American Journal of Syphilography and Dermatology*, vol. i., No. 1, p. 40, New York, 1870.

salves applied for the purpose of healing the ulcer, and afterward kept up and rendered almost incurable by the defective character of the local circulation due to the varicose and over-distended condition of its veins. Now, these same conditions often coexist at the anus: constant exposure to contact of irritating substances, and a sluggish condition of the circulation of the part from varicose hæmorrhoidal vessels. To treat this disease successfully, then, you must neither underrate its importance, nor the difficulty of the task you assume; but, with the means I have pointed out to you, I trust you will not fail. In any event, do not confound it with pruritus ani.

The *oxyuris vermicularis*, or thread-worm, often effects a lodgment in the rectum, especially of children, and this parasite is a frequent cause of itching at the anus. It is generally remedied by injections of lime-water, by which the worms are dislodged, and the use of means to improve the general health. As a general rule, parasites are not entertained in an organism unless its vitality is feeble.

But these thread-worms exist in the adult as a cause of persistent itching at the anus more frequently, I suspect, than is generally supposed; and their presence is not easily detected. In obstinate cases it would be well to examine the part carefully

at the time when the paroxysm comes on, and this is usually just after the patient has got warm in bed. The little parasites, which resemble scraps of white thread, about a third of an inch in length, may be thus detected just emerging from the orifice of the anus, or squirming about in its immediate vicinity. If not found on the first search, you must try again; and, if you fail after repeated examinations in this way, cause the dejections to be retained in a vessel as they are passed, and scrutinize them carefully. When found, the diagnosis is clear; but the cure, in the adult, is not so easy. The ova of the parasite seem to be protected by the tenacious rectal mucus which envelops them. Lime-water does good as an alkaline solvent. By retaining for a few minutes after each stool a half-pint or more of water, medicated by the addition of as much chlorate of potash as it will dissolve, with some glycerine, and a small quantity of carbolic acid, I have succeeded in removing them. Fowler's solution of arsenite of potass, and the tincture of the muriate of iron, may be used also to medicate enemata; but, without perseverance in the use of the remedies, the itching is liable to return. To bring about a permanent cure, it is necessary, in addition to the use of local remedies, to inquire into and modify all pernicious habits of life, and improve the general

health of the patient by change of occupation and change of air.

It may happen that no local cause whatever can be found for the itching, and in this case it is probably kept up as a symptom of some remote irritation in an internal organ, or of a morbid condition of the nervous centres, brought about by overwork, or, possibly, it is indicative of serious organic disease. Sir Benjamin Brodie mentions the case of a gentleman who was cured of an obstinate pain in the foot by the dilatation of a stricture in his urethra; and I have had reason to believe that itching at the anus, in more than one case, owed its persistence to irritation reflected from the prostatic urethra, even where no stricture was present.

The disease known as *piles*, or *hæmorrhoids*, with the exception of an ordinary "cold," is, perhaps, the most common of all human ailments. They are small, rounded tumors, generally of a red or purplish color, which form either just without, or just within, the orifice of the lower bowel; hence the distinction between *external* and *internal* hæmorrhoids. They take their origin in over-distended and varicose blood-vessels, principally veins, modified by the mechanical violence to which their position exposes them. There is a net-work of good-sized veins surrounding the lower end of the rectum

for an inch or two, in the rather abundant connective tissue between its mucous membrane and the layer of circular muscular fibres surrounding it, which is known as the "hæmorrhoidal plexus." These empty into the inferior mesenteric vein, which, uniting with others, forms the great portal vein—through which all the venous blood from the abdominal viscera is carried into the liver at its transverse fissure. Now, it is a remarkable fact that none of these veins are provided with valves, and consequently, whenever the abdominal circulation is sluggish or obstructed—as by an overloaded colon, a "congested" liver, or an abdominal tumor, ovarian perhaps—there is a strong tendency to stagnation in its lowermost tributaries—the hæmorrhoidal veins. Hence the latter are often found in a state of varicose enlargement, with thickened walls and pouch-like dilatations, like the varicose saphena veins of the lower limbs, and those of the testicle in varicocele, which, in consequence of their dependent position, so frequently take on these morbid changes, although they are provided with valves. It is not a matter of surprise, then, that this varicose condition should be so common in the veins at the lower end of the rectum; nor yet that printers, hair-dressers, dentists, and others, whose occupation keeps them habitually confined

within-doors, in the upright position, should be very liable to hæmorrhoids, and that literary and professional men, and others who sit a great deal, should share this liability. I do not remember ever to have seen an Indian with "piles," although in early life I saw something of their ailments; and there is no analogous disease in quadrupeds, where the trunk of the body is prone and not upright in position. In view of its "predisposing causes," therefore, the disease would seem to be an appanage of civilized humanity.

On the other hand, its "exciting cause" is, principally, neglect and irregularity in answering the calls of Nature, and the violence thoughtlessly inflicted upon the lower end of the rectum in the extrusion of costive stools by forcible effort.

Under the influence of these causes, a mass of dilated veins projecting into the gut, or at its margin, and subjected to the frequent repetition of bruising in the act of defecation, is liable to attacks of inflammation; and, the connective tissue surrounding the veins becoming infiltrated with exudation, the morbid anatomy of the hæmorrhoidal tumor is thus explained.

Within the bowel, the mucous membrane investing the little tumor, consisting thus of dilated veins, and condensed connective tissue, becomes

more or less altered, mainly by thickening; and its surface is often granulated, like that of the palpebral conjunctiva in chronic inflammation. But there are small arteries conveying blood to these tumors, and they also participate in the enlargement of calibre of its vessels, and the thickened and granulated mucous membrane is thus rendered also exceedingly vascular—often bleeding at the slightest touch, and, when protruded from the anus, sometimes small streams of blood jet forth from it, as from divided arteries.

Or, without the bowel, at the margin of the anus, where there is no room for indefinite growth by dilatation, one of the little venous pouches (such as you see represented in this painting, enlarged from Quain), which has been slowly forming, suddenly bursts while the patient is straining at stool, giving rise to a tense livid tumor, generally rounded in shape, which causes no little anxiety. An external hæmorrhoidal tumor formed in this manner generally takes on inflammation to a variable extent; but it may remain entirely passive, and when you come to see it, perhaps in a day or two, will present the appearance of a purple grape. If you should draw a knife across it, which would be proper treatment, a globular clot of blood would roll out, and the tumor thus obliterated would be

seen to be the result of simple extravasation. This variety of tumor, from rupture, is not encountered within the cavity of the rectum, I presume because its walls are more yielding; the rupture occurring while the venous pouch is forcibly pressed against the hard and distended sphincter muscle.*

Now, to complete my account of *external* piles, I would say that you will always encounter them in the shape of one or more tumors at the margin of the anus, formed in the manner I have just described, and presenting one of the three following conditions:

1. Inflamed in a greater or less degree.
2. Free from inflammation, grape-like.
3. As flabby tabs, or folds of skin.

* I was recently called to see a young lady who had been taken with rather free bleeding from the orifice of the bowel as she was dressing for a morning reception. She belonged to a family several of the members of which had suffered from internal hæmorrhoids, and I had already advised palliative treatment for the same affection in herself on several occasions, and had even suggested an operation, as she was in the habit of losing blood. At this visit, as the bowels had acted just before, I presumed that an internal hæmorrhoid was still protruding, and that it would be retracted if she assumed the horizontal position, and simply advised her to lie down. At my next visit I found that, although all protrusion had disappeared on lying down, the bleeding had nevertheless continued for several hours, and to an unpleasant extent. She was anxious for an operation that would rid her of this liability to a recurrence of bleeding, and I made an appointment accordingly. When I came to examine the parts in a good light, under ether, I found at the margin of the anus no less

Of these, the first is the most frequent in occurrence, and the most serious, in view of the great pain and inconvenience it occasions. The element of inflammation is the main feature with which we have to deal. This is often accompanied by general disturbance of the system in the way of fever and arrest of function in the blood-making organs, with furred tongue, and absence of appetite. The pain, to relieve which is the most prominent indication of treatment, has in all likelihood been so great as to have prevented the patient from attempting a passage from the bowels, so that your first duty will be probably to secure the performance of this necessary function by a dose of castor-oil, which, for these cases, is the best laxative; and, with this, order a warm bath, if feasible, and afterward a

than three well-marked venous pouches, like those pictured by Quain, and in one of them, the largest, a round hole, as though made by a punch, evidently the result of ulceration, terminating in rupture.

Here the wall of the dilated vein had become consolidated with the integument by previous inflammation, so that when the rupture took place the blood escaped externally, and not into the meshes of the surrounding connective tissue, as when the purple, grape-like tumor is formed, as described above. This, then, is a rather rare example of bleeding from an *external* hæmorrhoid. The bleeding in this case was precisely analogous to that to which persons with varicose veins of the legs are liable, from thinning, or ulceration and rupture.

I found also several well-developed *internal* tumors, to which I applied the ligature, and the patient is now entirely cured.

poultice of flaxseed-meal, or slippery-elm flour, with lead-water or opium in the poultice, if you choose.

If you have an opportunity to treat the case at its commencement, pounded ice is an excellent sedative; it allays pain, and may cause the inflammation to abort. It should be applied in a partially-filled bladder, and moulded to the part. But, later, warm relaxing applications will be found to answer best.

Let your patient keep his bed, and lie as much as possible with the hips elevated. After the oil has acted, give enough precipitated sulphur, with bi-tartrate of potash, or some other saline,* from from day to day, to keep the stools soft and unirritating, and to act as a cooling sedative to the system at large. I have not formed a favorable opinion of the action of leeches upon inflamed hæmorrhoids.

If the patient has been seen early, these meas-

* The following is an excellent formula, employed by my colleague, Prof. G. T. Elliot:

℞. Magnesiæ sulphat.
Magnesiæ carb.
Sulphuris precipitati.
Sacchari lactis, āā ʒ ss.
Pulv. anisi, ʒ ij.

Misce bene.

S. One or two teaspoonfuls, mixed in water, at bedtime.

ures should bring relief to the pain and inflammation in a day or two. Examine the part daily, and look out for suppuration in the inflamed tumor—which is possible, but not probable. The presence at its centre of blood-clot, or fluid blood, may convey the sensation of fluctuation, when pus in reality has not formed; and I warn you of this, because it is better that you should not be officious with the knife. I prefer that the inflammation should terminate by resolution, if possible; and that the little tumor be left to shrivel away into a small tab of integument, which, with prudence and cleanliness, will rarely cause trouble. If you cut into one of these tumors when inflamed, the incision is not necessarily followed by relief, as when the tumor is not inflamed—unless pus has formed; and an unnecessary incision might possibly be followed by inconvenient hæmorrhage, or even by fistula.

The inflamed tumor often becomes œdematous, in consequence of retardation in its circulation by the grasp of the sphincter muscle, which, irritated by its proximity, also adds greatly to the local pain by its spasmodic and irregular contractions. A large œdematous external hæmorrhoid is sometimes moulded into an odd shape by the pressure of the nates; but, by the time the watery swelling has come on, the extreme pain and inflammation have

usually culminated, as in a gum-boil, and it may safely be left to itself. At this stage the emollient anodyne-poultice should be replaced by an astringent: lint, saturated with strong Goulard's extract; or the ointment of nutgalls, combined with stramonium-ointment, if you can get it freshly made after the American formula. These tumors often take a long time to subside and disappear; but, as soon as the pain has ceased, the patient becomes reassured, and is satisfied to leave the remainder of the cure to Nature, aided by your advice.

Suppose that an external pile should not disappear by absorption, as it usually does, but remain as an excrescence, painless but troublesome, and liable to become again inflamed. In this case it may be excised; and, where it has become indurated as a consequence of inflammation, it is better, after dividing the integument by an incision radiating from the anal orifice, to separate the skin from the tumor well down to its base, and, seizing it with the toothed forceps, remove it by a pair of scissors, curved flatwise of their blades. You incur no danger of contraction of the orifice by this mode of operating, which, if you removed a tumor, together with its integumental covering, might possibly follow. The little flaps of skin—the third form of external piles, which, in fact, are nothing more than the shrivelled

remains of the first two varieties—when it is necessary to remove them, may be excised with the curved scissors without any previous dissection. In the second variety, when you have divided the delicate integument and turned out the extravasated blood, as already mentioned, no further treatment is usually needed. If there should be any tendency to bleed, use the dried persulphate of iron and lint; and remember that incisions, in this region, should always radiate from the anus.

You will meet with inflamed external hæmorrhoids most frequently in persons under middle age, who have not yet learned that it is unwise to neglect and abuse themselves; and, in addition to the treatment I have recommended for the disease when present, it will be well for you to assist your patients in learning, from their experience, how to prevent its recurrence in future. There is much occasion here for good advice, for the hygiene of the function of defecation is, mainly through false delicacy, a sadly-neglected topic. Simple, well-selected food, and a sufficient amount of active outdoor life, are the best means of removing predisposing causes. You should strive to remedy temporary or habitual constipation by other means than cathartic pills. An india-rubber tube, for self-injection, is one of the best substitutes for drugs; and the

judicious use of mineral waters is capable of doing much good; but it is still better, if possible, to find out the cause of the unnatural condition, and remove it by hygienic means. Successful preventive treatment is the best proof of skill founded upon science.

LECTURE II.

INTERNAL HÆMORRHOIDS.

Internal hæmorrhoids, or "bleeding piles," constitute a more serious disease than the *external* variety, inasmuch as it tends to undermine the general health of the sufferer, to interfere materially with his usefulness, and even, in extreme cases, to place life in danger. It is more insidious in its approaches, and more persistent in character.

We have seen the external form of the disease characterized mainly by inflammation and pain, and these features are temporary. *Internal piles*, on the contrary, form more slowly, attain greater development, and are less frequently the seat of inflammation; they are more chronic in their nature, invariably complicate themselves with more or less prolapse of the mucous membrane of the rectum, and, as their name implies, are a constantly-existing source of loss of blood, or hæmorrhage. It is this latter feature which renders the disease a serious

danger to health and life, and the means to be adopted for its prevention and cure of so great interest to the surgeon.

I have already spoken of the morbid anatomy of the hæmorrhoidal tumor, of the causes which tend to produce it, and of its mode of formation. Situated immediately beneath, and involving the actual structure of the mucous membrane of the rectum just above the external sphincter-ani muscle, and rarely more than three or four in number, these little rounded masses of enlarged veinules and arterioles imbedded in condensed and hypertrophied connective tissue, having invested themselves with its mucous lining, project gradually into the cavity of the bowel; and, as soon as they have attained sufficient size, they form, of course, more or less of an obstruction to the free passage of its contents.

Liable, then, to daily forcible contact with the fecal mass in process of extrusion from the gut, the tumors themselves are gradually pushed before it, and, through the yielding of the loose connective tissue between the mucous membrane of the rectum and its muscular coat, they are finally extruded through the anus with a stool, carrying with them more or less of the mucous membrane in which they have grown; and this constitutes the

"prolapse" of which I have spoken. The sphincter muscle, contracting promptly around their membranous attachment, prevents the immediate return of the mass, and it remains protruding at the anus —a cluster of livid, half-strangulated vascular tumors, from the surface of which, as the patient sits in the water-closet, the blood oozes and drops rapidly, or even actually flows in a stream. The presence of the protruded gut bearing the tumors gives the sensation of something more to be expelled from the anus, and the patient consequently strains in order to expel it, and thus unwittingly increases the loss of blood and aggravates the prolapse. On resuming the upright position the protruded mass is spontaneously retracted within the anus, the relaxing sphincter permitting it to slip back into its place.

But, after the process I have described has been frequently repeated, recurring as it does with every stool, the hæmorrhoidal protrusion, having assumed more extensive proportions, does not retire of its own accord within the bowel; and the patient, having recognized by this time that his "body comes down," is obliged to put it back by his own effort, often by tedious and painful manipulation. The repeated stretchings to which it is subjected, by the daily protrusions of the

hæmorrhoidal mass, impair the contractile power of the sphincter muscle in some degree, so as to diminish its reliability as a sentinel, and after a while the piles will come down at other times than at stool, slipping through the relaxed sphincter by the mere pressure of the superincumbent viscera. As soon as the protrusion has occurred, however, the sphincter is stimulated to increased contraction, and the protruded parts are so painfully pinched that the sufferer is obliged to retire and "put them up."

A prominent lawyer, a sufferer from hæmorrhoids, once told me that this accident always happened to him in court when he rose to address the bench; and that he had learned how to prevent it, whenever he had an important case in hand, by securing an action from the bowels the evening before. If he went to the closet in the morning he was certain to be annoyed, and, as he remarked, "he could no more argue a case with his piles down than he could square the circle."

The explanation of this not uncommon feature of the disease is, simply, that the sphincter, which has been overstretched and partially paralyzed by the protrusion at stool, requires some hours to recover again its full power of contraction. I have often recommended patients liable to this trouble to visit the water-closet, as a

habit, before retiring at night, which, for a time, will prevent it. The condition is analogous to that of a patient suffering from hernia, or of a woman with falling of the womb; but, although a truss will relieve the rupture, and a "supporter," perhaps, may help the prolapsed uterus, I warn you not to trust to pads and mechanical appliances as a remedy for piles which "come down."

It happens sometimes that when the patient retires to reduce the prolapsed hæmorrhoids, the clothing is found saturated with blood; and this always causes much alarm, although, perhaps, an equal amount of the precious fluid may be lost daily at stool without the patient's knowledge.

Another phase of the disease when fully formed, happily not very common, is the *irreducibility* and *strangulation* of the protruded hæmorrhoidal mass, the patient's efforts to replace it having failed, generally through delay. A gentleman going out to ride in a light wagon after breakfast, felt his piles slip out as he was stepping into the vehicle, and not wishing to detain his companion, did not attempt to replace them until his return, when he found them quite hard and painful, and he was unable to accomplish the reduction. When I saw him next day, he was suffering greatly; the intense congestion from strangulation had passed into the stage

of acute inflammation; he had had no passage from the bowels, and was quite feverish. The part was so exceedingly painful, that he could not bear to have it touched. But he consented to inhale a little chloroform, and as soon as its effect was produced, I anointed the mass freely with cold cream, and reduced it. He had no further pain.

But, in the case of a lady who had suffered for a long time from internal piles, with protrusion and frequent bleeding, the accident had a different termination. She found herself one day unable to replace the tumors; and, although they soon began to give her excessive pain, she took to her bed, and declined aid through fear of exposure. It was nearly a week afterward when I saw the patient and heard her account of the intense suffering she had experienced. I found an offensive, black, sloughy mass, for which I could do nothing but order an application of chloride of soda to relieve the odor, which in fact had induced her to see me, and administer anodynes and gentle stimulants. Within two days afterward, the whole mass came away while she was sitting on the night-chair, and she lost several ounces of blood; but after this she got well promptly and found herself, to her surprise, entirely cured of her troublesome piles. Here, the inflammation following the intense con-

gestion caused by strangulation had advanced rapidly to its termination in mortification, and the whole gangrenous mass sloughed off, leaving a healthy granulating surface, which rapidly cicatrized, and, by its contraction, cured the disease. This is Nature's mode of cure; it is rough, and not free from danger, but effectual. The danger attending it is not so great to life as it is of subsequent stricture of the rectum, if perchance the slough should have involved a complete circle of the mucous membrane. The cure is effected by the destruction of the hæmorrhoidal tumor—the source of the bleeding; and the consolidation of the lax connective tissue between the mucous membrane of the rectum and its muscular coat, and the closer adhesion between these parts which takes place while the consequent ulcer is healing, prevent a return of the prolapse.

The surgeon, taking the hint from the result of these cases, brings about a radical cure in a somewhat similar way; but attended by little pain and no danger. Selecting an opportunity when the parts are free from inflammation, he effects the destruction of the tumors by safe and appropriate means, and relies upon the changes which attend the process of repair to consolidate the parts and cure the prolapse of the bowel.

The means which have been employed to destroy the tumors are various; I have tried them all except excision, and can confidently recommend to you *strangulation by the ligature* as the safest, surest, and most manageable procedure.

The use of the knife or scissors was fully demonstrated by Dupuytren's experience to be dangerous; he lost several cases from hæmorrhage, which comes on insidiously after the operation—the blood not escaping externally, but accumulating gradually in the cavity of the bowel. The actual cautery is a repulsive procedure, and not easily applicable under all circumstances. Galvano-cautery promises well, when proper apparatus is at hand. Of the potential caustics, nitric acid acts too slowly; and the others, in addition to this objection, are unmanageable. Chassaignac's *écraseur*, and its modifications, in which iron or copper-wire is substituted for the chain, require more time in their application, and bleeding *does* sometimes follow their use in this operation. The various clamps recommended by the instrument-makers are, to say the least of them, unnecessary; and injection of the tumors with solution of persulphate of iron is painful and inefficient. On the other hand, a stout ligature of silk, or gut, or hempen thread, is always to be readily obtained; its application requires no

great amount of anatomical or surgical skill; and the result you will find certain and satisfactory—if you follow the rules I am about to give you.

The patient being in good condition for operation, with bowels acting regularly and well, let him delay his daily stool until your visit, and present himself to you immediately afterward, with his piles thoroughly protruded; let him stand, bending forward over a bed or chair, with the parts exposed to a good light. Having provided yourself with a tenaculum, a double hook—such as is found in every operating-case, forceps, scissors, and several stout needles armed with long double ligatures, seize the largest of the tumors with your hook—which you transfer to an assistant, telling him to draw gently upon it; then pass a curved needle pretty deeply through the base of the tumor, draw it through to the middle of the double ligature, cut the needle free, and proceed to tie one of the ligatures as deeply as possible, at either side of the base of the tumor, drawing your first knot tightly, so as to strangulate the included tissues thoroughly. Repeat this procedure upon each of the remaining tumors—there are rarely more than three or four at the most, sometimes only one or two—cut off your ligatures short, and then carefully replace the strangulated tumors within the

cavity of the bowel. This is the outline of the operation; now for the details. If your patient cannot get his bowels to act at the time of your visit, or if the tumors do not come down satisfactorily, let him have an emena of tepid water, and try again. If they tend to retract during the operation, let him sit over warm water and strain; and it is well to have a curved spatula, or Sims's speculum at hand; also, to transfix and thus secure all the tumors you propose to ligate, before you begin to tie. Introduce your curved needle from without inward, protecting the gut from its point by your finger; strive to get well up into the bowel, and, if possible, avoid including any of the delicate semi-mucous integument of the anus in your ligatures, as this increases greatly the pain of the operation at the moment, and afterward. If you are successful in this, the pain of the operation is really trifling. If you cannot succeed to your satisfaction, it is better to divide the integument on the anal side of the tumors' base by the knife or scissors, and, in tying, lodge your ligature in the groove thus made. This is a practical point of importance, for the delicate semi-mucous membrane of that portion of the rectum habitually grasped by the sphincter is far more sensitive to violence than the gut within; and, when included in a ligature, it is

painfully pinched by the irritated muscle, becomes œdematous and rolls out at the anus, giving the patient the unpleasant idea that his piles have come down again. Moreover, like one of the varieties of external hæmorrhoid, this sort of swelling is very slow to disappear, and then leaves behind it a tab of loose skin.

In the majority of cases requiring this operation your patient will claim the benefit of anæsthesia, or, if of the other sex, it will become you to recommend it, so as to spare her modesty, as well as to prevent possible pain. Here, not having the voluntary assistance of the patient in forcing down the hæmorrhoids and presenting them for operation, you will be obliged to vary your mode of procedure very materially, or you will operate at a disadvantage.

I have adopted, under these circumstances, the following mode of managing the patient, and it has succeeded so well in my experience—which covers now a large number of cases—that I can safely recommend it. I have found it of little use to have the patient force down his piles before the anæsthetic is administered, inasmuch as they are very apt to slip into the bowel again as the sphincter becomes relaxed; but I prefer that the patient should rinse out the bowel by an enema of tepid

water, before he takes his place upon the couch or table. This latter should be firm, narrow, of convenient height, and in a good light. As soon as the patient is fully under the influence of the anæsthetic, I have him placed in Sims's position for operation on the uterus and vagina, that is, with the upper part of the body prone, the hips elevated, and the thighs flexed on the abdomen. There should be an assistant to take entire charge of the administration of the anæsthetic, and at least one more to aid the operator.

I then commence the operation by thorough and complete *forcible dilatation* of the sphincter-ani muscle, by which the interior of the lower part of the rectum is placed entirely at my disposition, and afterward proceed to the ligature of the hæmorrhoidal tumors in the manner and with the precautions already described. The paralysis, or to speak more accurately, the atony, of the sphincter muscle, which results from this manœuvre of forcible dilatation—which I will explain more fully another time—secures not only the great advantage to the surgeon of free and ready access to the lower part of the rectum, but it saves pain and trouble to the patient after the operation. The muscle does not recover the full vigor of its contractile power for a week if the manœuvre has been thoroughly accom-

plished, and meanwhile the patient is spared much pinching of tender parts. I have thought that retention of urine, which sometimes follows the operation for internal piles, has been prevented by it.

As to after-treatment, a little morphine is advisable, to delay the action of the bowels, if not necessary to relieve pain. I generally introduce a suppository, containing half a grain, into the rectum before concluding the operation; and often this is all that is required. The patient should remain in bed, and use a light diet of bread and milk, with beef-tea or *consommé*. The first passage from the bowels—and this should be delayed for three, four, or even five days, if there is no uneasiness from flatus or other source—is to be effected by the aid of a moderate dose of castor-oil; and it is well to assist its action at the proper moment by an enema of warm flaxseed-tea. The introduction of the tube of the injection apparatus does not cause the pain usually anticipated; and if a little warm sweet-oil should be added to the injection just before the withdrawal of the tube, the passage which follows is often entirely painless. Repetition of the stool within a day or two should be prevented, by paregoric, if necessary; and the enema should precede each motion for the fortnight following the opera-

tion, with the additional use of a small quantity of some mild laxative preparation containing sulphur, if required, to keep the fecal dejections soft in consistence. The ligatures require no looking after; they take care of themselves, coming away spontaneously; and the healthy ulcers which they leave in falling heal without trouble if the precautions I have first detailed are observed. I have known a hard stool, voided by effort, to be followed by some bleeding a week after the ligatures had come away; the hæmorrhage in this case comes from the congested granulating surface of the unhealed ulcer, and the patient is usually alarmed, through apprehension that his malady has not been cured. But the bowel never comes down after the operation by ligature; the hæmorrhoidal tumors can never be again protruded; of this the patient can be assured. During the second week the convalescent is usually able to resume his occupations; and, with reasonable care, the cure is found to be permanent.

There is no operation of surgery which, in its ultimate results, gives more satisfaction than that which I have just described to you for the radical cure of internal hæmorrhoids. The numerous symptoms resulting from hæmorrhage and its consequences, in the way of depression and disturbance

of the nerve-force, bring the sufferer great comfort by their disappearance, and he is surprised when he realizes the full amount of the damaging influence of the disease from which he has been relieved by the operation.*

* As a rule, bleeding piles rarely relapse after an operation which has been judiciously and thoroughly performed; yet I have met with two cases, both females, in one of whom bleeding returned, but not the prolapse, while in the other there were both bleeding and protrusion to such an extent that I was compelled to repeat the operation. Both of these ladies were near the critical period of life, and this circumstance seemed to me to influence the persistent tendency to congestion and hæmorrhage from the vessels of the rectum. In the former the hæmorrhage was periodical, but not regularly so; and the symptom of *digiti semi-mortui* was present. At the end of some three years the tendency to bleed disappeared, with the menses, and she has since enjoyed good health. In the other case, hæmorrhage returned some months after the second operation, but in a less degree. This lady showed evidences of venous dilatation in other regions of the body, and she belonged to a family who might be said to present a varicose diathesis. After the change of life her bleedings, which had been irregularly paroxysmal, gradually disappeared, and she has remained well.

There exists, no doubt, in some cases, a general varicose dilatation of the capillaries and smaller venous radicals, as well as of the larger hæmorrhoidal veins, and this condition favors a tendency to hæmorrhage, especially in women; and it also begets an impaired condition, as to quality, of the tissues which they imperfectly drain. I encountered an example of this impairment of nutrition in a case upon which I recently operated for eroded and ulcerated internal piles, complicated with fissure. The lady had been suffering for many years from loss of blood from the rectum, and presented a very anæmic appearance. Latterly, the pain in defecation had become so excessive that she was obliged to apply for relief. I employed forcible dilatation to facilitate exploration, as well as to accomplish the cure of the fissure, and, although I used no more than

Is there a possibility of averting the necessity of operative interference by palliative measures? The local application of nitric acid, and the habitual use of injections of cold water, are remedies which have a certain degree of reputation, and I will endeavor to give you an idea of their exact value.

In young, full-blooded subjects, the hæmorrhage that attends internal piles in their forming stage, is sometimes greater in proportion than the prolapse or protrusion; and you will find, perhaps, on examination of the part, an intensely red, vascular,

the usual amount of force, both the integument and the sphincter muscle gave way as though they were rotten, and some laceration occurred. The venous bleeding that followed was so free that I passed a good-sized sponge, armed with a stout double ligature, up the rectum, and an assistant made compression by drawing upon the ligatures, while I completed the operation upon the hæmorrhoidal tumors. The subsequent application of persulphate of iron arrested the bleeding, so that I removed the sponge before the patient recovered from her anæsthesia, and she recovered very rapidly and very perfectly, both from the operation and her painful maladies.

In cases where this tendency to persistent hæmorrhage from the rectum has existed I have found benefit from iron, iron and manganese in combination, gallic acid, injections of cold water, both before and after movement of the bowels, and ice in the rectum; and also from the water of the Oak Orchard mineral spring, which contains free sulphuric acid, and the water from the Rockbridge alum spring, of Virginia. I have also advised that the patient should always use a bed-pan, and have the bowels act while in the horizontal position; and this precaution has seemed to diminish the loss of blood.

velvety surface, limited in extent—from which the bleeding takes place, and no fully-formed tumors whatever. In such cases as this, nitric acid is an excellent remedy; and, if judiciously applied, it will cure the tendency to hæmorrhage. You use the pure, strong acid, applying it with great caution—so as not to invade surrounding healthy surfaces, by means of a glass rod with a rounded end, or a flat piece of wood, having previously dried the altered surface. A yellowish eschar results, attended by slight inflammation, which tends to consolidate the unnaturally vascular tissues in its immediate neighborhood; and to this, and the contraction which follows the healing of the superficial ulcer left by the falling of the eschar, the benefit produced by nitric acid is attributable. For cases of this kind, and of this kind only, the acid is a good remedy; and, if you can induce your patient to live judiciously afterward, you may cure him permanently by its use. But where tumors have already formed, and the complication of prolapse has commenced, you can expect little good, unless it be a temporary diminution of the bleeding.

The value of cold-water injections is mainly due to the effect of *cold*, in causing contraction of the unstriped muscular fibres in the walls of the varicose blood-vessels of the rectum, and in the muscu-

lar coats of the rectum itself. Hence, when thrown into the bowel before a stool, besides softening the fecal mass and facilitating its expulsion, they tend to shrink the vascular hæmorrhoidal tumors and to render the surrounding tissues firmer, and thus to diminish or prevent protrusion.

The use of these two remedies as indicated, together with such modification in diet, habits of life, and hygienic surroundings, as your science and tact may suggest, comprise the most efficient palliatives at your command; and, in the event of their failure, you are justified in advising and performing the operation for radical cure.

As to the question of danger of the operation by ligature: in selected cases, it is so trifling as to be hardly appreciable. In between sixty and seventy operations, I have never had an unpleasant result. In over one hundred cases of operation by ligature, the late Valentine Mott had one fatal result—in a a gentleman "who had just before met with great reverses in business." From the symptoms as recounted, I infer that the cause of death, in this case, was suppurative phlebitis, as he "fell into a typhoid condition" shortly after the operation, and "small abscesses were found in the liver after death." I have knowledge of one other case where a similar result followed a partial operation; the

patient, a medical man, having subjected himself to exposure and over-fatigue within a day or two afterward.

There is a popular impression that the bleeding from internal hæmorrhoids—which, in many cases, assumes an irregular periodical character, recalling the catamenial flow—is salutary; or at least that it seems a protection from more serious disease, as a sort of safety-valve to the system. I am confident that there is no truth in this idea; at all events, I have arrested the flow in a good many instances, and I have seen none but good results from the interference. The anæmic head-symptoms, such as ringing in the ears, and the like, often supposed to indicate a "tendency to apoplexy," have always promptly disappeared, together with other alarming sensations due to impoverished blood.

In operating upon internal hæmorrhoids of long standing, I have encountered, in several instances, tumors which had become dense and fibrous in their consistence, with more or less tendency to the formation of a pedicle—a change which I ascribe to the induration following repeated attacks of inflammation. In one case the hardness was so considerable as to awaken a suspicion of cancer, which, however, proved to be unfounded, as the lady recovered entirely.

LECTURE III.

POLYPUS—PROLAPSUS ANI—ABSCESS—FISTULA IN ANO.

Polypus of the rectum is an uncommon disease, occurring in the majority of instances in children; at least this has been my experience. A simple, little, elongated, fleshy-looking tumor, consisting in its structure of the microscopic elements of connective tissue, and covered by the mucous membrane of the bowel which has become stretched out so as to form a slender pedicle for it, presents itself at the anus, protruding after a stool very much like an internal hæmorrhoid, for which at first it is generally mistaken. Sometimes, indeed, through the bruising and strangulation thus encountered by the action of the sphincter, the polypus becomes congested and bleeds; but, on examination, it is found to be harder in consistence and less vascular than a hæmorrhoidal tumor; and following it up with the finger, it is found to be connected with the wall of the bowel, well above the sphincter, by a narrow

and constricted neck. Until it has grown large enough to come out in this manner at the anus, a polypus of the rectum causes little or no inconvenience; its existence, in fact, has probably not been suspected. An ordinary silk ligature applied tightly around the pedicle of the little tumor, is the proper remedy; you may cut off the ends of the ligature, and then snip off the tumor below it, and no further treatment will be required.

Prolapsus ani, "falling down" or "descent" of the bowel, is a complaint of more common occurrence; and you will probably meet with it also more frequently in children, in whom the undeveloped os sacrum presents less of a concavity than in the adult for the support of the lower bowel, and who are liable to violent and uncontrollable fits of straining from slight causes. In the adult it is often a complication of advanced stricture of the urethra, the act of straining to make water favoring the descent of the bowel; and it frequently accompanies stone in the bladder, at all periods of life. In the old man, it is favored by the presence of an enlarged prostate, the bulging of which into the bowel deceives him into frequent efforts at stool; and here also the increasing laxity of parts promotes the descent.

Like hernia and procidentia uteri, the protru-

sion of the lower bowel tends continually, if unrelieved, to increase in volume; and sometimes, when of long standing, it attains an enormous size. An old stricture patient in the adjoining hospital had a prolapse which measured seven inches in length, and four and a half inches in diameter at the anus —the orifice of which was proportionately distended. It came down in full volume whenever he strained in the attitude of squatting; in urinating in the upright position, however, by keeping his thighs approximated closely, and his perineal muscles contracted by special effort of the will, he could prevent any protrusion, his stricture having been measurably relieved. His sphincter ani was unreliable from frequent over-distention; it was in a state of permanent dilatation from atony, and also diminished in volume by atrophy. This enormous tumor was conical in shape, with its base at the anus, and presenting at its apex an opening, through which the finger, when introduced into the cavity of the invaginated bowel, passed readily its whole length; and when grasped between it and the thumb, the impression was clear upon the mind that all the coats of the rectum were present in the tumor—the fibrous and muscular coats, as well as mucous membrane; and that the tumor, as was evident also from its measurement, comprised not only

the whole length of the rectum, but in addition several inches of the colon. In the dissection of a similar tumor, Mr. Queckett, of London, found not only all of the proper coats of the lower rectum, but also a good deal of peritonæum. This, then, is the distinguishing characteristic of true prolapsus of the rectum: that it involves the whole thickness of the walls of the rectum, and not its mucous membrane alone dragged away from the muscular coat through the yielding of the connective tissue between them, as in the prolapse which complicates internal hæmorrhoids.

Singularly enough, the protrusion, however large, seems to occasion little pain or serious disturbance of function. It presents a blood-red color, increased by congestion from constriction at the sphincter, and its surface, marked with deep transverse rugæ or wrinkles by the contraction of the longitudinal fibres of the muscular coat of the bowel, is smeared with the tenacious mucus peculiar to the part—discolored by fecal matter, and sometimes streaked with blood.

In children suffering with this disease, the mother will generally tell you that it came on during an attack of bowel-complaint, suddenly—like a rupture produced by straining; and, in addition to the prolapse, which comes down at every stool and

has to be "put back," often with much trouble and pain, you will find the child pallid and unhealthy, with more or less persistent derangement of the digestive function.

To treat the case properly, you should take measures to remedy this condition of the bowels, which is probably keeping up the habitual descent of the rectum, and then instruct the mother to prevent the child from having a passage from the bowels in the attitude of squatting; to secure their action always in the horizontal position while the child is lying upon its back in bed, with a bed-pan beneath the nates. Under these circumstances the prolapsus will not take place, unless the child strains excessively; and after two or three weeks of this preventive treatment, if the general health has been meanwhile improved, you will find that the tendency to protrusion of the rectum has ceased.

I was told by a Southern gentleman who brought his daughter to me several years ago with a large prolapse of some duration, at the age of five, that the child had the disease in her second year, and had been entirely cured by her negro nurse, who forced her to evacuate her bowels always in the *standing* position, placing her in a cold bath immediately after the motion. It had

returned, however, the year before his visit, during a severe attack of dysentery, and still persisted. She got well entirely and permanently under the treatment I have recommended, which I think you will find efficient in all cases but those in which the protrusion is of large size and long standing, or kept up by some cause which has not been removed.

Where there is no such influence to interfere with a favorable result, even the worst cases are curable by a surgical operation in addition to this treatment; the object of the operation being to diminish the diameter of the overstretched outlet of the anus, and also of the bowel just within, and thus oppose a barrier to the ready recurrence of the protrusion. Dupuytren accomplished this by removing an elliptical fold of integument at three points in the circumference of the anus, the fold including the skin just without, and also a portion of the membrane just within the orifice.

The operation is readily effected by means of forceps, shaped for the purpose, by which the fold is seized, and curved scissors, by which it is excised, the existing dilatation of the anal orifice greatly facilitating the necessary manœuvres. The late Valentine Mott modified this operation, in an aggravated case of prolapse in an adult, by removing

several larger elliptical portions entirely from the mucous membrane, and drawing together the edges of the resulting bounds by sutures, in addition to Dupuytren's radiating incisions at the verge.

In a child of thirteen, of defective intelligence, with an enormous prolapse which had existed from infancy, I also adopted this mode of operation, substituting for the exsection of elliptical folds at the verge the application at several points of its circumference of the actual cautery, by means of a small button-headed iron at a dull-red heat. I was led to the adoption of this expedient from having observed the strong tonic contractions produced in the sphincter muscle by the contact of the actual cautery with the tissues in its immediate vicinity, while testing the value of this agent in the cure of internal hæmorrhoids. The effect is prompt (the patient being insensible from ether), and very remarkable. In fact, I should feel confident in relying entirely upon the actual cautery for the cure of large and old prolapsus of the rectum in the adult; applying the incandescent button to the mucous membrane in lines or spots, more or less frequently and deeply according to the size of the protrusion, then reducing it, and completing the operation by two or three applications to the verge.

Of course, after any of these operations, the patient should be confined to a horizontal position for a week, and employ a bed-pan when the bowels act for at least double this period, to diminish the possibility of relapse.

The atony, and possible wasting or fatty atrophy of the sphincter-ani muscle, are the serious impediments in the way of a permanent cure of old prolapsus of the rectum; and where a repetition of the actual cautery is not available, I would recommend the use of the electro-magnetic current, which possesses much power in restoring the lost function in other voluntary muscles.

I was once called to the assistance of an old gentleman who had a sudden descent of the rectum happen to him while foolishly straining in the water-closet. He had never had any thing of the kind before, and did not know the nature of the accident which had befallen him. I experienced some little difficulty in effecting the reduction of the protruded bowel through the spasmodically-contracted sphincter. In such a case, ether or chloroform might possibly be necessary, for harm sometimes follows prolonged bruising of the parts. Cruveilhier relates the case of an old man who entered a hospital with a prolapse of long standing, recurring at each evacuation of the bowel, but

which had become irreducible the day before. It was reduced by prolonged efforts, but the patient was attacked the next day by serious symptoms, and died within five days, of suppurative phlebitis. Inflammation had invaded the veins surrounding the rectum, and numerous abscesses were found in the liver.

Abscess in the immediate vicinity of the anus and rectum is a form of disease that you will encounter not unfrequently.

At the verge of the anus it is limited in size, and usually the result of inflammation developed in an external hæmorrhoidal tumor. But in the loose connective tissue around the lower end of the rectum between its muscular coat and the levator ani, and again in the angular space between the latter muscle and the bony wall of the pelvis, formed here by the ischium, known as the ischio-rectal fossa, and occupied by connective and fatty tissue, abscesses occur of larger extent.

Often taking their origin in violence, from overdistention of the pouch-shaped lower end of the gut, and sometimes in actual perforation of its walls by fish-bones or other bony spicula swallowed with the food, these abscesses are also in many cases entirely idiopathic, occurring spontaneously as a consequence of vitiated blood and a depressed

condition of the vital powers. In individuals who habitually deprive themselves of the amount of muscular exercise in the open air necessary for health, and gratify their appetites at the same time to the full extent that Nature permits, the blood becomes loaded with material destined for the nutrition of the muscular system, which forms so large a proportion of the bulk of our bodies. This material, not worked off by muscular exercise in accordance with Nature's intention, renders the blood unfit for the healthy nutrition of the other organs of the body, and clogs the emunctories in vain endeavors to get rid of it. We see it in the excess of matter with which the urine is often loaded, and in the perverted character of other excretions. An organism thus encumbered and oppressed in its normal functions, although otherwise healthy, is liable to become a prey to disease on slight provocation ; to explode with a carbuncle, an erysipelas, or an abscess in the loose tissues around the lower end of the rectum. This is what I mean by "vitiated blood and consequent depression of the vital powers." In a faulty constitution, of course, the liability to disease from trivial causes is greater; but, otherwise than in this way, I am not aware that a person of tubercular diathesis, or one predisposed to consumption, is more liable to ab-

scess near the anus and its consequences, than another. Women, in my experience, are less frequently the subjects of idiopathic abscess in this region than men ; as they are also of carbuncle, and some other affections of this class.

In the present connection, perineal abscess from obstructive disease of the urinary passage does not concern us. I will speak of it hereafter as a consequence of stricture of the urethra.

An abscess near the rectum is likely to be preceded and accompanied by a good deal of constitutional irritation, and you can understand from what I have just said why this is so; and also that the general treatment applied to the case should be influenced by these considerations. The cause of the constitutional disturbance is generally announced by local pain, generally severe, sometimes deep-seated. But this is not always the case. I have known a collection of pus to form in the loose cellular tissue outside of the rectum, and discharge itself into the cavity of the bowel just above the sphincter, with no suspicion of its existence until the pus was noticed in the dejections.

When ulceration through the mucous membrane of the rectum has occurred, fecal matters find their way into the cavity of the abscess from the bowel through the ulcerated communications, and

new irritation is lighted up; the abscess burrows and extends; a brawny red or livid surface of skin is discovered externally near the anus, painful to the touch, but yielding no sense of fluctuation to the fingers—rather a hollow, boggy sensation. Things often present themselves to the surgeon in this attitude; and he has no alternative but to effect free external incision at once—after which the constitutional irritation subsides, the burrowing ceases, the parts digest, granulations appear attended by a discharge of healthy pus, and the prospect seems fair of rapid and complete recovery. But experience teaches the surgeon that this result is seldom, if ever, attained by the unaided efforts of Nature. The cavity of the abscess contracts down to the dimensions of a sinus, one end of which opens into the bowel, and the other externally, and at this stage of the process of repair the powers of Nature usually fail. The granulations become pale and unhealthy; the discharge watery; and the walls of the sinus grow sensibly thicker, and, at the same time, hard and dense, so that it feels to the finger of the surgeon like a sort of hollow tube embedded in the tissues. In this condition it may continue indefinitely without material change, and cause, perhaps, but slight pain and annoyance, constituting the surgical disease known as *fistula in ano*.

I would have you understand, from what I have said, that abscesses near the end of the lower bowel, as a rule, to which exception is rare, terminate thus in fistula.

The explanation of this result is obvious: its cause is the constant motion to which the healing part is subjected by the proximity of the restless sphincter muscle, and of the muscular pouch of the rectum, which is continually varying in volume, and, consequently, in its relations to surrounding parts. Just at the period of the cure, when the reparative power naturally flags, and when rest and quiet, and the prolonged contact of the granulating surfaces are necessary for their final consolidation, they are rudely torn asunder in the act of defecation; and this interference with the healing process being necessarily repeated at short intervals, Nature finally gives up her efforts to complete the cure, and an unhealed indolent sinus or fistula remains.

Is there any mode of treatment by which abscesses occurring in this region can be prevented from terminating so uniformly in fistula in ano? From what I have already told you concerning the general and local causes in which they take their origin, you will infer that the chances of obviating this result are but slender. The damage has gen-

erally been done before you see the patient. The means at your command are limited to such general remedies as tend to restore and stimulate suspended or impeded functions: gentle laxatives, the warm bath, saline diuretics, and, afterward, tonics and simple supporting diet, with rest in bed and warm poultices locally. With these you will rarely succeed in bringing about a resolution of the original inflammation; and when pus has formed, it will be your duty to give it vent by an early and free incision. In view of the fact that your incision will probably fail to heal, you should not forget to warn your patient of this contingency; inform him that you recommend interference in order to economize pain, and to limit destruction of tissue, but that, in any case, such abscesses almost inevitably result in fistula, which, for its ultimate cure, will require another operation.

The operation which is sanctioned by experience as the most prompt and certain, at the same time that it is the safest in its result for the radical and permanent cure of fistula in ano, is to lay open the sinus into the rectum, dividing all the tissues intervening between its cavity and that of the bowel with the knife.

The question will naturally present itself when you are about to open an abscess near the anus,

whether, with the almost certain result of a fistula in prospect, it would not be better for your patient that you should complete the operation for its cure at once? My experience would lead me to answer this question in the negative. It is the wiser course to simply open the abscess, and take the chance, poor though it be, of its healing. When the indolent sinus shall have formed, all the inflammation having subsided, you will probably secure a more prompt result by operating for the cure of the fistula.

The pus evacuated from an abscess near the rectum is at first very offensive in its odor, from exosmosis of gases through the tissues. As it lessens in quantity and becomes serous in character, a simple pledget of lint to absorb the discharge is all the dressing required. Some fecal matter, or bubbles of gas from the bowels, are liable to escape through the sinus from time to time. These constitute evidence that the fistula is "complete," as it is technically called when it opens both internally and externally. When the abscess has discharged externally, no ulcerative communication having been formed with the cavity of the rectum, it forms a "blind external fistula." When it has discharged itself into the rectum so thoroughly that no external opening has been effected, "a blind internal fistula" is the result.

As you would infer from its mode of origin, a fistula in ano communicates with the bowel in the great majority of instances. But it is not always easy, when the external opening exists, to introduce a probe through it into the cavity of the rectum, for the route of the sinus is generally crooked, and it often traverses the substance of the sphincter ani muscle. The internal orifice of the fistula will be found usually near the upper limit of the muscle, and its position may be often recognized by the finger, at the centre of a little projecting teat of granulations. In some cases the probe will pass upward for a considerable distance outside of the rectal walls, and in contact with them, but it does not follow that the communication with the gut is situated so high up. If it were, it would be practically useless to search for it, inasmuch as the full curative influence of the incision will be secured if it extend no higher than the upper limit of the external sphincter, that is, about an inch from the margin of the anus; and the walls of the bowel cannot be divided above this more than half an inch without danger of hæmorrhage from branches of the hæmorrhoidal arteries.

The route of the sinus can be more easily traced, and a probe or director passed into the rectum, when the patient is under anæsthetic influence; and it

has been my practice, in case of delay or difficulty in finding the inner orifice of the fistula, to make one artificially by perforating the mucous membrane, which is generally all that intervenes, with the point of a director just above the sphincter. Then, bringing the point of the director out at the anus, the operation can be completed by running a stout bistoury along its groove, and dividing all the included parts. The manœuvre will be facilitated by using a silver director, which may be bent. The French surgeons employ a delicate gorget of box-wood, concave on one side, to introduce through the anus, and receive the point of the director, which is then committed to an assistant, while a knife is introduced along the groove of the director until its point strikes the wood, when knife and gorget are withdrawn together. The latter is the preferable mode of performing the operation, when the amount of tissues to be divided is large.

LECTURE IV.

FISTULA IN ANO (CONTINUED).

To consider again the earlier stages of fistula: it sometimes happens that the cavity of the original abscess is extensive, and that there is a considerable amount of undermined integument, reaching even to the buttock—perhaps with several imperfect external openings; and, through defective vitality on the part of the patient, the process of repair may not have fairly commenced even after the lapse of some time; or, burrowing may be still in progress.

Here the treatment indicated is to make free depending openings so as to secure the prompt escape of all fluids secreted in the cavity of the abscess or its ramifications, and to administer well-selected generous diet, with tonic medicines, giving your patient, if necessary, a change of air, perhaps to the sea-side, and delaying the operation for the cure of the fistulous communication with the bowel

until Nature is ready to second your intention by a healthy reparative effort.

Or, again, your patient may be the subject of progressive organic disease in some vital organ; of tubercular disease of the lungs for example, the fistulous abscess at the anus being but an intercurrent malady—another evidence, in fact, of imperfect textural nutrition in an already enfeebled constitution. In this case, you have little to hope from surgical treatment; all your skill is to be directed against the tubercular diathesis, and the pulmonary disease, which are placing life in immediate danger. In short, to render the operation for the cure of fistula in ano reasonably certain of success, your patient's general condition of health must be sufficiently good to warrant the anticipation that the parts will heal promptly, after you have placed them in a favorable position for healing. In other words, it is Nature that really effects the cure; the function of the surgeon being limited to the removal of impediments, and to securing fair play for her efforts.

I would not have you infer that the existence of phthisis, or a tendency to this disease, necessarily stops you from all effort to cure a fistula; or that the fistula is an issue established by Nature as a remedy for the pulmonary disease. I do not share

this latter belief, which I know has a strong hold upon the popular mind, believing rather that the relation between the two diseases is what I have just stated, and that they are both due to a common cause—impaired nutrition. If a tubercular patient is improving in health and gaining in weight, and is prevented from taking exercise in the open air by a fistula, I see no reason why you should not give his fistula a chance to heal by a judicious incision. I have even deferred so far to existing prejudice as to transfer the fancied exutory to the patient's arm, by establishing there an old-fashioned pea-issue, and have had no reason to regret the adoption of this course. This, however, is to be regarded as exceptional practice. As a rule, you will rarely be justified in operating upon a phthisical patient for fistula; and it is to be borne in mind, that if the patient does badly after an operation, the unfavorable result will be possibly charged to your interference. The true reason for the rule is, not that the operation tends to aggravate the existing pulmonary disease, but that the parts you divide will probably fail to heal, and the patient's condition may be thus rendered still more uncomfortable.

In a case of fistula where the external opening is situated at a considerable distance from the ori-

fice of the anus, it will be proper for you to trace up the sinus with a probe or director, and endeavor to effect a counter-opening nearer to the anus, through which the operation may be completed by less extensive division of parts. The freedom of the new opening, and its depending position, will probably lead to the consolidation of the remainder of the sinus without laying it open throughout its whole length.

When a fistula has several external openings, and in hospital practice we not unfrequently encounter old cases where the disease has been of long standing and complicated by a repetition of abscesses, in which the parts around the anus are riddled by them, there is room for the exercise of much good judgment in the management of the various sinuses in such a manner as to avoid too extensive incisions, and yet to secure a successful result to the operation. If the rule is blindly followed of laying open every old sinus unhesitatingly in addition to cutting freely into the bowel, which at first sight seems necessary in such a case, the surgeon may possibly impose a heavier task upon the reparative powers of the patient than they are able to accomplish. I have seen cases of this description in hospitals, in which Nature's powers had been miscalculated, and in which wounds made

for the purpose of curing fistulæ had entirely refused to heal; in subjects, too, where no organic disease was present to account for the failure, nothing but simple lack of vital capacity to complete the process of repair. I would have you remember this practical fact, therefore, and exercise due caution in regard to the extent of your incisions. It is better, after careful study of the case, to lay open several of the sinuses into one, if possible, and then wait until they have granulated and begun fairly to contract, before repeating the preliminary operation, if necessary, upon others; watching meanwhile the patient's general condition, and securing for him every possible hygienic and dietetic advantage. When you have thus succeeded in reducing the number of the sinuses and their external openings, if the prospect seems favorable, the operation may be completed. I succeeded in a very unpromising case of this kind, in a patient with a broken constitution, from the Southwest, after three preparatory operations, the intervals between them having been passed at the sea-side.

To render you practically familiar with this disease so that you may be entirely successful in its treatment, which is my earnest desire, I must dwell for a moment upon another point. I have just cautioned you against the possible error of using

the knife with too much freedom. Now, it is as well to know that you may err also in the opposite direction, and not use it quite enough. There are few surgical diseases in which the healing process habitually shows less vigor than in fistula; it is difficult to arouse it in the first place—nothing short of a cutting instrument answering the purpose; then it readily flags, without apparent cause; and, as I have already stated, it sometimes dies out entirely. Now, there are reasons for this peculiarity which we must seek both in the causes which give origin to the disease, and in the circumstances by which it is perpetuated. Those in whom it occurs, if not constitutionally feeble, are already defective in vital power through the influence of disease, unhealthy occupations, or bad habits of life. The parts affected are unfavorably situated in respect to circulation; the veins by which it is drained of its effete blood being mainly destitute of valves, and often in a varicose and over-distended state, as I have already had occasion to describe when explaining the pathology of internal hæmorrhoids. There is consequently, from venous stagnation or congestion, a defective and irregular supply of pure arterial blood transmitted through their capillary vessels. Now, we know that a steady and ample supply of freshly-arterialized blood is necessary for

the healthy nutrition of a part. It is even more necessary in a part where the process of repair is going on, as this involves growth and development, as well as nutrition. Rapid reparation would be as unlikely to follow an injury or a surgical operation under these circumstances of defective circulation as for a farmer to reap a good crop from badly-drained land, no matter how thoroughly he might plough it.

Again, in fistulæ of long standing the walls of the sinuses are hard and gristly, and their surfaces glazed and destitute of granulations. Their condition is very much the same as that of an *indolent varicose ulcer*, of which you see so many examples in the adjoining hospital, where the effort to heal has been systematically balked, until it ceases entirely, and the materials brought for the purposes of repair accumulate as a worse than useless embankment of induration. Now, in order to stimulate an indolent ulcer of the leg to heal, we improve the blood-supply of the part by keeping the limb in a horizontal position, and applying equable and systematic pressure by means of adhesive straps or a bandage. We cannot bring such means as these to bear upon the indurated tissues in which old sinuses and fistulæ in the region of the anus are embedded, and we are

therefore compelled to use the knife upon them, and this is the practical point at which I am aiming. In operating upon old fistulæ, do not hesitate to incise freely the hard gristly walls of the sinuses you lay open. Your scarifications, if confined to the indurated tissues, can do no harm, and will contribute greatly to their rapid absorption, and to the restoration of a natural and supple condition to the parts, which is necessary to healthy healing. In short, follow the example of one of our distinguished old surgeons of the New-York Hospital,* who remarked, while effecting this manœuvre upon a chronic case of fistula: "I find that the more I cut cases of this sort, the sooner they get well."

I have devoted most of my remarks upon this subject to the management of difficult cases, of which a large proportion find their way into the metropolitan hospitals. In private practice you will more frequently encounter cases of fistula of recent occurrence, and limited extent, which will yield to judicious treatment with little delay; but it is as well to be prepared for the bad cases.

In regard to the dressing of the wound after operation, and other points of after-treatment, a few words are to be said. As soon as the necessary incisions have been completed, carefully and

* The late John C. Cheeseman, M. D.

deliberately seek out and apply a ligature to any points which may give arterial blood. There is generally a good deal of oozing from the hard cartilage-like tissue around old sinuses, for the walls of the small vessels which traverse it cannot contract, as in supple, healthy parts; they are converted into minute venous sinuses—*canalisés* as the French term this condition. It is usual to meet this tendency to ooze, by pressure, filling in the incisions with picked lint, covering the lint with a compress, and applying a T bandage over all; and this serves for the first dressing. Or, you may syringe the wound with a weak solution of the persulphate of iron, and afterward apply a stronger solution freely to the whole cut surface, forming thus a crust of coagulum which will take the place of any other dressing. This preparation is in no degree escharotic, and I have thought, in quite a number of recent wounds to which I have applied it, that it exercised a favorable influence upon the subsequent healing process. It certainly leaves the wound in a similar condition as under Nature's dressing—the scab.*

* Prof. J. J. Chisholm, of the University of Maryland, has proved "by long experience the utility" of the persulphate of iron as an after-dressing in fistula, immediately after the incision.—*Baltimore Medical Journal*, No. II., p. 81, February, 1870.

As a rule, however, the hæmorrhage is trifling; and it is not desirable, under any circumstances, to insert more lint into the wounds than just what is necessary to keep the cut surfaces asunder, as its presence adds to the subsequent discomfort of the patient. I have known too liberal dressing to cause much distress, and even to be followed by retention of urine. But the lint should be placed honestly in contact with the bottom of the incisions, otherwise their design, which is to bring about suppuration and granulation of the whole exposed surface, might be defeated by their immediate reunion. After the first dressing, evacuation of the bowels should be put off for two, three, or four days, by the aid of a little paregoric, if required; and, when the proper time has arrived, the administration of a moderate dose of oil will bring away the dressings with the contents of the bowels, the T bandage having been previously cut away. After this, a lighter dressing every day or two, or the simple introduction of the well-greased finger down to the bottom of the wound, to insure its healing honestly and to prevent any attempt at the renewal of sinuses by superficial bridges of granulations, is all that is required.

At first these wounds heal vigorously; hardness melts away, florid granulations sprout rapidly, and

every thing looks favorable. But there usually comes a time, about when the patient begins to sit up, that the vigor of the healing process begins very manifestly to diminish. The "stimulus of the knife," as John Hunter calls it, has worn out. I have thought that the upright, and especially the sitting position, had a good deal to do with this characteristic retardation of the cure after operation for fistula, and I have, therefore, kept my patients in bed as long as I possibly could without injury to the general health, and have found the period of cure shortened by this course. In most cases the ultimate healing of the wound is accomplished more slowly than the patient's hopes have led him to anticipate, and it is as well to warn him early not to expect a very rapid cure—its certainty and permanence being even more desirable than rapidity.

Is there any justification in attempting to cure fistula in ano by other means than the knife? There are generally individuals to be found in every community, with more or less pretension to surgical skill, who make a living by ministering to the fear of the timorous with remedies substituted for the cutting operation, and I have heard of "wonderful" cures of very simple cases effected by the seton, after months of treatment; I have even

seen an individual with a substitute for the conventional bullet hanging from the fundament upon a string, with the avowed design of "cutting through a fistula so deep as to be too dangerous to operate upon." But I cannot advise you to yield to the groundless apprehensions inspired by an operation which, in the hands of a judicious surgeon, is both safe and certain. Even Louis XIV. arrived at a correct conclusion on the subject at last, and feed the surgeon who cured him right royally.

To revert once more to the abscess in which fistula in ano takes its origin: this is usually idiopathic—as I have led you to believe—but it is not always so. It occurs sometimes to persons in sound health—from a traumatic cause; hard fæces or irritating substances in the fecal mass producing lesion—ulceration, perhaps perforation, of the mucous membrane of the rectum; and this lesion is obviously more liable to take place from such a cause in one of the little sacculi or pouches just above the external sphincter which result from its constriction of the gut; the locality, in point of fact, as I have already stated, in which the internal orifice of the fistula is almost always to be found. In operating upon an army officer for a fistula of more than a year's duration, I came upon a hard sharp body, deeply lodged in the sinus I was incis-

ing, which proved to be a fragment of chicken-bone, about three-quarters of an inch in length, and very sharp at both ends. This had evidently perforated the rectum, and given rise to the abscess which resulted in the fistula, the internal extremity of which was in the usual place, just above the sphincter, within an inch and a quarter of the anus. It is to be observed that the abscess in this case had been regarded as idiopathic; it had discharged externally, and no internal communication had been suspected until the fistula established itself. I am disposed to think that this mode of origin of abscess and fistula is perhaps more frequent than is generally supposed. The rule is probably a correct one, that abscesses near the lower end of the rectum originate spontaneously, and that they discharge externally; but the exceptions are not infrequent in which they have a traumatic cause, or, even when this is wanting, communicate with the bowel before they discharge externally. When they open in the first place externally, that portion of the mucous membrane of the rectum in contact with the cavity of the abscess becomes denuded and bare — a condition we often recognize when searching for the intestinal opening of a fistula with a curved probe and a finger in the bowel, and under these circumstances, ulceration

through the mucous membrane takes place secondarily.

An incomplete fistula communicating with the gut only—a blind internal fistula—is now and then encountered, but it is probably more frequently overlooked. When a slightly-painful lump, varying from time to time in size and degree of tenderness, has existed for any length of time in the vicinity of the anus, this condition of things is to be suspected; and further examination will probably justify an external incision, and a subsequent operation for radical cure. Still more rare is the incomplete fistula, where the opening into the gut is wanting—the blind external fistula. Sir Benjamin Brodie denied the existence of such cases,* but Mr. Curling † describes two specimens in the museum of St. Bartholomew's Hospital, in London, which demonstrate the fact, and Mr. H. Smith ‡ speaks of three others, at St. George's.

The fact that the sinus so often pursues a tortuous course through the fibres of the sphincter muscle will explain, in most instances, any difficulty that may be encountered in carrying the probe through into the rectum, and also the greater success which attends the operation when

* Lectures in *London Lancet*, 1843–'44, vol. i., p. 592.

† "Diseases of Rectum," 1851, p. 61.

‡ "Holmes's Surgery," vol. iv., p. 200.

the patient is under the relaxing influence of an anæsthetic. If, however, after searching carefully in the proper locality for the internal opening, the denuded mucous membrane of the rectum alone is found to intervene between the finger in the rectum and the probe, and if you still fail to discover the orifice of communication, you need not hesitate to puncture the membrane and treat the fistula as complete. The old rule that the operation will not be successful unless the internal opening of the fistula has been discovered and included in the tissues divided by the knife, no longer holds good under these circumstances. A sinus may extend upward alongside of the rectum for several inches, and yet the true communication with its cavity will be found not at the upper termination of the sinus, but just above the external sphincter; and if the director be passed through this opening, and the operation completed upon it, the freedom of the depending opening thus established will effect the consolidation of the undivided sinus above. There is nothing to be gained, therefore, by searching for an opening into the bowel at the end of a long fistulous tract; if an opening exist there, which is rarely the case, it would be unsafe to make use of it in incising the whole tract, and experience has taught us that the true opening

lies within a shorter and safer distance of the anus, and that the disease can be cured by a less extensive and dangerous operation.

The exaggerated dread of this disease and of the operation required for its cure results from the traditional impressions still lingering in the popular mind as to its grave character, and the severity and danger of the operation—derived from the extravagant and erroneous ideas which prevailed concerning it before the middle of the last century. Fistula in ano was then regarded as an essential and progressive disease, not very dissimilar to cancer—the "scirrhous" hardness around the old sinuses, and the absence of any tendency to spontaneous cure favoring this idea; and it was to be thoroughly extirpated by the knife, no matter how extensive the incisions necessary to carry out this purpose. We still hear hospital patients from the old country speak of "cutting out the fistula," and I have been asked more than once after an operation, if I was "sure it was all out."

This false conception of the nature and treatment of the disease was first exposed by the eminent English surgeon, Percival Pott, with whose name you are familiar in connection with tubercular disease of the vertebral bodies. About the year 1765 Mr. Pott set forth, in the lucid and able style

that characterizes all his writings, the true pathology and mode of cure of fistula; and we are still guided by his opinions. If you will permit the digression, I cannot resist the desire to express my admiration for this clear-headed old surgeon, and to recommend you to study his "Chirurgical Works," which are classical—in the true sense of the word. I confess he has more fascination for me than any other surgical author. His sagacity and out-spoken honesty are only equalled by the simplicity and elegance of his style. In reference to the literature of syphilis, I advised you to avoid old authors, as likely to perplex rather than aid you; but this warning does not apply to Percival Pott, who may be regarded as the Sydenham of surgery, and a worthy contemporary of Pope, Johnson, and Goldsmith.

Within the present century, the principal advance in knowledge of the disease we are studying is due to a French surgeon, Ribes, who, carrying out the views received from his teacher, Sabatier, the contemporary of Desault, contributed, about the year 1820, a very remarkable paper to the literature of the subject.* He examined no less than seventy dead bodies of persons affected with fistula in ano,

* *Quarterly Journal of Foreign Medicine and Surgery*, London, October, 1800. Article I., p. 337.

and gives the result of much patient investigation into the normal as well as morbid anatomy of the parts involved in the disease. Sabatier taught that the operation for fistula was best performed with a probe-pointed bistoury and a grooved director, and that the latter, when curved, could be readily introduced through the sinus and brought out at the anus, because the natural seat of the internal orifice was not more than an inch within the bowel. Ribes made his series of *post-mortem* examinations in order to ascertain the soundness of this novel doctrine of his master, and entirely demonstrated its truth. His conclusions were at once adopted by Brodie, and subsequently by Syme, and are received as established authority at the present time.

There is a point to which I will again refer, as it involves a question of practice concerning which I am anxious that you should have a positive opinion—the necessity of an early opening of abscesses which form near the anus. This measure involves the probable consequence of fistula, in nineteen cases out of twenty; but, after fairly setting forth the reasons for interference, the incision should not be delayed. The rapid increase in the size of the abscess after pus has once formed, and the certainty of greater destruction of tissue by burrowing, render promptness a duty. The extensive cavities

we sometimes see around the lower end of the rectum, attended by numerous fistulous openings, result from neglect of this necessary surgical aid. On the other hand, the earlier the opening is made, the greater the chance of escape from the almost inevitable fistula. Cruveilhier, in his "General Pathology," and other high authorities, give occasional examples of prompt and thorough cure after early opening.*

I have told you that the explanation seemed obvious why abscess near the anus failed to heal and degenerated into fistula; but I must confess that it has never been quite clear to my mind why, after an early and free opening, the parts should not close in a reasonable time, like the wound left

* The following instructive case occurs in Cruveilhier's "*Traité d'anatomie pathologique générale*," vol. ii., p. 620:

I was called in consultation to see a merchant in the Rue St.-Denis who had been suffering for three days with excruciating pain at the anus, and found a very hard inflammatory swelling of considerable size extending from the anus toward the perinæum. The opening of the swelling, by the knife, was put off until the evening of the next day—and for this error in practice I was not responsible. By this time we found an enormous increase in the swelling, with a good deal of elastic tension. Professor Auguste Bérard made a free incision, giving vent to a quantity of gas and horribly fetid pus. This patient got well without any fistula—a pretty positive proof that there had been no communication between the abscess and the cavity of the rectum. The presence of the putrid gases was evidently the result of decomposition of the inflamed cellular tissue, which had fallen into gangrene.

after the lateral operation of lithotomy, which is very similarly situated and which, in my experience of a good many cases, although sometimes slow, has never failed to heal by the unaided efforts of Nature.

It would seem hardly necessary to speak of the *diagnosis* of fistula, after what I have said concerning the *complete* and *incomplete* forms of the disease, the position of the internal opening, and the rarity of its absence; yet the external opening may be so small, or so much concealed between the folds at the margin of the anus, as to require a sharp eye and close inspection. It is well to know also, that it sometimes heals over entirely, but only to reulcerate. Complaint of the frequent presence of an unnatural degree of moisture of the anus, or of stains on the clothing in contact with the part, are suspicious circumstances.

The amount of pain attending the disease is very slight, and often entirely absent. Patients apply for relief rather through its interference with cleanliness, or from a sense of imperfection, than from suffering. Syme cured a "gentleman of sixty," by operation, who had been a subject of the disease for thirty years.*

* "Principles of Surgery," McLean's ed., Philadelphia, 1866, p 536.

If I have been prolix in my remarks upon this malady, it must be my apology that you will, most probably, be often consulted in regard to it; and of all surgical diseases, it is that of which the family physician is most frequently compelled to undertake the cure. I have therefore felt desirous that you should become familiar with its treatment, and the principles upon which the details of that treatment are based.

LECTURE V.

FISSURE, OR IRRITABLE ULCER.

There is no disease to which humanity is liable—certainly none so insignificant in extent—which is capable of causing more intolerable suffering than the ailment generally known as *fissure of the anus*. It is more properly styled *irritable ulcer of the rectum*, for this designation describes accurately the true pathological nature of the disease. The ulcer originates in a fissure or crack in the delicate integument lining the orifice of the anus, or, to speak with greater exactness, in the mucous membrane just about assuming the character of skin, which lines that portion of the rectum embraced by the sphincter-ani muscle. Doubtless there are cracks and fissures occurring frequently in this exposed locality, under the influence of costiveness and violent stretching, which get well promptly without their existence having been suspected; and others again which last a longer or

shorter time, and give but little trouble. But, in certain conditions of the system, and where, under the necessity imposed by habitual constipation, this forcible distention is repeated daily, the fissure fails to heal promptly; and then, as under all similar circumstances of constantly-repeated mechanical irritation, inflammation develops itself in the little wound, and just in proportion as the inflammation advances the effort at repair diminishes, until finally it ceases entirely. The solution of continuity, or ulcer as it is now, being still exposed to constantly-recurring mechanical violence and to the contact of chemically-irritating substances, is kept thus in an actively-inflamed condition, and soon puts on all the features of an irritable ulcer. If examined at this time, it presents to the eye an appearance which resembles not a little that of a simple or soft chancre. It can be brought into view without much difficulty if you carefully press apart the margins of the anal orifice—certainly the lower portion of the ulcer, for its shape is generally elongated and narrow, from that of the fissure in which it took its origin; and you will find it situated more frequently, but not necessarily, upon the posterior wall of the outlet of the bowel, toward the coccyx.

This disease occurs in both sexes, oftener, according to my experience, in women; most fre-

quently also in the earlier portion of middle life, and in persons of an irritable or sensitive nervous system. It can scarcely be called a common ailment, but I suspect that it not unfrequently escapes recognition under the somewhat vague title of "neuralgia." *

The prominent characteristic of the irritable ulcer of the rectum is the peculiar and intolerable character of the pain which attends it; and this is singularly out of proportion to the trifling extent of the lesion—of which it is the solitary symptom. To such an extent is this true that the sufferer, when the nature of his case is explained to him, is not unfrequently loath to believe that his exquisite tortures are the result of so insignificant a cause. If I am not mistaken, the surgeon also, until he has cured his first case, will share this feeling of doubt in some degree. But the employment of a remedy by which the character of the ulcer is changed, is

* Gosselin says that fissure is rare in infants, the superficial erosions of erythema being often mistaken for it. He has also observed it more frequently in women than in men, occurring in the former often after vaginitis, and after confinement. Here the discharges from the vagina predispose to an inflammatory condition of the integument at the anus, which takes the form of herpes or erythema, in the erosions following which, according to this authority, fissure often takes its origin. The greater liability of the sex to constipation, and the fact that the integument is thinner and more easily lacerated, also explain why fissure is more common in women. —(*Op. cit.*, vol. ii., art. anus.)

followed by immediate relief to the pain; and, happily, we possess the power of effecting this result instantaneously, and with equal safety and certainty.

You will be naturally anxious to know how to recognize an affection for which there is so prompt a remedy, and this knowledge is gained by observing the periodical character of the pain, and the manner in which its paroxysms are produced—for it is paroxysmal in its occurrence, and at times the patient is entirely free from suffering. You will find that the pain invariably follows the act of defecation; either immediately, or after a short interval. In the act itself, the pain is not necessarily severe; it may be confined to a moderate sensation of smarting or burning; but shortly afterward the peculiar, unbearable, tormenting pain which characterizes the disease comes on, and continues without cessation for a period which varies, in different cases, from two to fifteen or twenty hours. It then goes off entirely, except in rare cases, to return again inevitably with the next movement of the bowels.

The pain, while it lasts, is not lancinating, nor aching, nor is it so very severe as to cause outcry or to affect the pulse; but it is a dull, gnawing, excessively distressing sensation, located just within

the orifice of the anus, which entirely unfits the sufferer for any occupation, and for which there is no palliation short of opium or an anæsthetic. The fear of reproducing it leads the patient to put off the calls of Nature; and this irregularity, together with the use of anodynes, perhaps, and the shattering influence of the constantly-recurring paroxysms of pain upon the nervous system, lead to disordered digestion and deterioration of the general health. The disease does not tend to get well spontaneously; neither time, nor change of air, nor general treatment, however skilfully applied, seems capable of curing it. I once saw a case in its fifth year, and the patient was a confirmed invalid—from this cause alone. In a young married lady from the West, who was sent to me some years ago, the severe and long-continued suffering she had experienced had led to the suspicion that she was the victim of cancerous disease; and the sallowness of her complexion, and a marked expression of habitual pain, seemed at first to lend a probability to this opinion—which she had received from a respectable source. But a digital exploration failed to detect the presence of any of the peculiar nodular induration of the tissues by which cancer is characterized; on the contrary, the parts had a perfectly natural and healthy feel, ex-

cept at a point just within the orifice, posteriorly, where the finger recognized a slight roughness and excavation, and its contact elicited a pretty positive expression of sharp pain. I was assured, moreover, that the examination would be followed by pain still more intense and long continued—as she had learned by previous experience. I endeavored to compensate for this by the assurance, which the knowledge I had just acquired enabled me to make very positively, that her disease was not cancerous, and that it could be cured completely and certainly within a week—which result was happily accomplished. As to the mode of invasion and previous history of the disease, I learned that the poor lady, immediately after her marriage, had much difficulty in securing privacy and opportunity to attend to the calls of Nature, and, through false delicacy, did not assert her rights, so that quite a mass of hardened fæces accumulated in the rectum, and, when she finally secured a chance, she "tore herself" in getting rid of it; that the "torn place," she thought, had never healed, and was the cause of her present disease and suffering; that she had gone without a passage from the bowels always as long as she could, sometimes as long as a fortnight, and had found that a dose of castor-oil rendered the suffering, which always followed a stool, per-

haps a little less, but that it lasted the best part of twenty-four hours invariably, unless she took laudanum, which she usually did. This case will serve to illustrate the mode of origin and subsequent history of irritable ulcer of the rectum, and to show also the amount of inconvenience and distress it may occasion.

The explanation of the very severe pain by which this disease is characterized is found in the persistent pinching and kneading inflicted upon the sensitive sore by the successive and unremitting contractions of the fasciculi of ultimate muscular fibres immediately upon which it is situated. These, by reflex irritation, are thrown into a state of unnatural contractile activity as often as violence is offered to the surface of the ulcer by the contact of irritating matters, in the act of defecation. It is not the whole sphincter muscle which acts at once, in spasmodic contractions; but only certain bundles of its ultimate fibres, and those which are in immediate relation with the little ulcer; and these, in accordance with the normal mode of contractility of the muscular fibre, continue to contract and relax alternately and unremittingly as long as the reflex irritation persists. Hence the teasing character of the pain. With this knowledge we can understand how division of the sphincter-ani

muscle, as first practised by the French surgeon Boyer, so promptly cured the disease, which before his day had been vainly met by ineffectual measures; and why the operation was for a long time regarded as its only certain and appropriate remedy. But the English surgeons found that a less extensive application of the knife was equally efficient in bringing about a cure; that the simple division of the mucous membrane through the centre of the ulcer, including the superficial layer of muscular fibres immediately beneath it, was sufficient to secure a successful result.* And, through the explanation I have just given you, we can also understand why this operation, which at present receives the sanction of the best authorities, so promptly arrests the peculiar pain of the disease, and is followed by rapid healing of the ulcer—because it cuts short the morbid contractile action in the contiguous muscular fibres.

There is also a simple manœuvre in which the knife is entirely dispensed with, which will cure this disease with equal promptness and certainty—the *forcible dilatation* of the sphincter-ani muscle, first proposed, I believe, by Recamier, of Paris, once the rival of Dupuytren, at the Hôtel Dieu. This

* T. B. Curling, "Observations on the Diseases of the Rectum," London, 1863, p. 10.

may be most readily accomplished by introducing both thumbs well beyond the external sphincter, back to back; then, taking a purchase from the buttocks with the out-spread fingers, carry the thumbs forcibly apart until their palmar surfaces are arrested by the ischial tuberosities. Or, as preferred by some, a mechanical instrument may be employed for the purpose—one of the numerous specula ani, the blades of which are separated by means of screw-power—like that of Weiss, of London, for example; but I find the thumbs answer best. Syme, of Edinburgh, used a speculum to bring the little ulcer into view, and at the same time to put the parts on the stretch, and then, while the anal orifice was thus distended, he incised the surface of the ulcer in the direction of its greatest length—which is almost always parallel with the long diameter of the gut, so that the edge of the knife crosses the tense fibres of the sphincter at right angles; and some of these require to be divided, as well as the mucous membrane upon which the ulcer is seated, in order to insure the success of the operation. I say some of the fibres of the sphincter immediately underlying the ulcer must be cut; but this is not absolutely necessary, if the stretching is carried far enough to temporarily paralyze them, and thus annihilate their contractile

power for a few days. Any measure, in short, that will accomplish this latter object will at once arrest the agonizing pain which characterizes the disease, and the ulcer will straightway take on healthy reparative action and cicatrize without further interference.

You may use the knife, then, or you may dilate —with the thumbs, or an instrument—or you may combine the two, as in the operation performed by Syme which I have just described, and by either of these modes of operating you will obtain a successful result; but remember, if you please, that, to accomplish this object, it is never necessary to divide the sphincter ani entirely, as in Boyer's operation. To the French surgeon belongs the credit of first pointing out a certain cure for this troublesome disease—which had been described, imperfectly, by Abucasis, Sabatier, Lemonnier, and others; but no prompt and satisfactory remedy was known for it before his day. His operation, however, was unnecessarily severe, and, like many other original operations, it has been very much improved; the pathology of the disease, also, as well as the mode in which its cure is effected, I think I may say, is now thoroughly understood.

Boyer asserts that fissure of the anus is not so rare a disease as is generally stated by authors, and

that he had seen no less than fifty cases, but that he had never seen it in a child.* Now, I have seen several cases of unmistakable fissure in children, some of which got well without operation under the influence of the greater activity of the reparative force that belongs to this period of life, and others degenerated into chronic irritable ulcers, requiring suspension of the contractility of the sphincter for their cure.

As to the frequency of the disease: it is still described by most authorities as rare, but I think that, perhaps, the reason of this discrepancy may be explained. I have already told you that the true nature of the disease is often overlooked, and that it is not unfrequently spoken of as "neuralgia of the anus," or "neuralgia of the sphincter ani." I know this to be true, for I have been consulted more than once for so-called "neuralgias" of this part, where, on thorough examination, I have discovered the presence of a fissure or irritable ulcer, and cured the "neuralgia" at once, by the means I have described. If you will excuse the digression, I would warn you against too much confidence in this expression "neuralgia," which is too often used to mean *disease*, where, in truth, it is only a synonyme for *pain*—which, after all, is but a symptom

* "Traité des Maladies Chirurgicales," t. vi.

of the disease, the real nature of which is still to be searched for. When you encounter this term, then, let it suggest a possible doubt as to whether it may not be employed in this loose way, and scrutinize the case closely before you accept it as one of essential *neuralgia ;* for the pain to which this name is applied may prove to be only a symptom of some undetected disease. Again, you will find, in most of the systematic works on "Diseases of the Rectum," a chapter devoted to "spasm," or "spasmodic contraction" of the sphincter ani, which is described as a painful and obstinate affection. Now, I am somewhat familiar with this complaint, and I know that it does occasionally exist as a disease *per se*, but always, according to my experience, in hysterical women, or persons liable to suffer from nervous gout. I have also seen several well-marked cases of spasmodic contraction of the anus, so called, in which, on careful inspection of the part while the patients were under the influence of an anæsthetic, an ulcer or fissure has been discovered, which explained at once the true cause of the affection and indicated a certain method of cure.

I detail this personal experience in order to impress upon you what I believe to be the truth of this question, viz.: that Boyer was not very far wrong in his assertion as to the frequency of the

disease, and to justify me in advising you to examine all the cases of "neuralgia" and "spasm" of the anus in which you may be consulted, if of any duration, under the influence of ether or chloroform, and with great care. I will take an opportunity to show you, on another occasion, the best method of exploring the rectum and anus for the detection of their diseases, and meanwhile will venture the opinion that the experience of the profession, with the aid of anæsthetics in diagnosis, will hereafter rather tend to confirm the assertion of Boyer as to the frequency of fissure, and also that in future we shall hear less of neuralgia and spasm of the anus.

In regard to the manœuvre of *forcible dilatation*, I have found it useful in curing painful spasm of the sphincter ani, even where no ulcer could be found to serve as a cause of the spasm, and, as already mentioned in describing the operation for the cure of bleeding piles, I have found that its employment renders this operation more easy of performance when an anæsthetic is used; in fact, under these circumstances, I regard it as indispensable. To secure the full amount of advantage from forced dilatation, it must be done thoroughly, and with about all the strength the surgeon can exert. Some of the muscular fibres of

the sphincter are generally torn across and the membrane lining the orifice somewhat abraded or lacerated, and occasionally a thrombus or ecchymosis will follow from rupture of a vein; but I have never seen any harm from these consequences of the operation. Nor does any inconvenience arise from the almost entire suspension of function of the sphincter; I have never heard of any trouble from involuntary escape of the contents of the rectum, although I do not confine my patients to bed after dilatation—the internal sphincter being, apparently, entirely reliable. This proceeding may seem to be rough, and to lack the precision and accuracy of the knife; but it is thoroughly scientific, and its practical value is established. Forcible dilatation when first applied to the cure of stricture of the urethra was opposed as a rough and unsurgical proceeding; but it has proved in practice to be a most valuable resource, finding more favor with thoughtful surgeons than the knife in the management of a large class of cases; and I anticipate a similar verdict for the same principle employed elsewhere.

It is hardly necessary to explain to you the manner in which this surgical manœuvre effects so prompt a cure of the chronic irritable ulcer, and of the pain which it occasions. It simply does away

with the cause which prevented the healing of the original fissure, viz.: the constant motion of the muscular fibres of the sphincter ani in its immediate vicinity. This unceasing movement of alternate contraction and relaxation which is continually going on, under the stimulus of reflex nervous irritation, in the fasciculi of its ultimate fibres, is arrested by overstretching them. After this there is a period of entire rest and quiet, during which Nature's process of repair, which has received an additional stimulus from the violence inflicted in the operation, speedily removes the unhealthy character of the sore and sets it to healing. The period of rest, during which the sphincter is in a condition of more or less complete atony, i. e., inability to contract, varies with the degree of force employed in stretching its fibres. It continues only a few days, but long enough to allow the ulcer to change entirely its character, and to take on healthy action.

This condition of *atony*—I prefer this term, as more correct than *paralysis*—from overstretching, is one of the characteristic attributes of muscular tissue; it constitutes the essence of fatigue, and explains the powerlessness that follows violent or unusual muscular effort; we see a familiar example of it in the sluggishness with which the bladder ex-

pels its contents after overdistention through delay in answering the calls of Nature. It is desirable that you should fully grasp the principle involved in this operation, for it may be applied in many other ways than for the cure of irritable ulcer of the rectum. I have had a good deal of experience in its use since 1863, when I read a paper before the Academy of Medicine calling attention to it as a remedial measure of which the value had not yet been fully recognized, and detailing cases in which it had been successfully employed.* From the evidence since accumulated, through the kindness of my professional brethren, I am in a position to bear still stronger testimony in its favor; and, without having dealt with quite so many cases as Boyer, I can say in regard to the employment of forcible dilatation of the anus as a substitute for the knife in the treatment of fissure, chronic ulcer, or spasmodic contraction, that, in my hands, it has never failed to bring about a cure.†

* "Transactions of the New York Academy of Medicine," vol. ii., pp. 180, 202, 222, Baillière, New York, 1864.

† Gosselin says that he has failed with this remedy in three women, but never in men—for whom, as it does not interrupt their daily occupations, he considers it very much preferable to incision. —(*Op. cit.*, p. 681.)

LECTURE VI.

STRICTURE OF THE RECTUM.

Like all the other hollow viscera of the body, the rectum is liable to contraction and narrowing of its calibre, or stricture—the common name of this affection, which, by giving rise to obstruction and interruption of function, leads usually to grave consequences.

When it is not the result of congenital deformity, stricture of the rectum occurs as a sequel of inflammation from traumatic violence—to which, from its accessible position, the gut is exposed; or, of idiopathic inflammatory disease leading to ulceration and destruction of tissue, as dysentery or soft chancre. In either case the well-known tendency to contraction which characterizes the organizable products of inflammation is the active element in producing the stricture. But, more frequently, stricture of the lower bowel is due to degeneration of the tissues composing its walls by the deposit in

their substance, or in masses or tumors in contact with them externally, of the material known as cancer. Stricture of the rectum is not a common disease, but I wish you to remember, when you do meet with obstruction to function from narrowing of the calibre of the bowel in this locality, that in a majority of such cases you will have to deal with cancer. I do not think that I state the fact too strongly in asserting that the presence of cancer is the rule—as the cause of this disease; and congenital malformation, and the contraction following inflammation or loss of substance, the exceptions. But, happily, these exceptions exist in a fair proportion, and, as they constitute the cases of stricture of the rectum in which treatment is of most avail—having thus called your attention to the important distinction between the benign and malignant forms of the disease, I will endeavor to make you familiar with stricture of the benign or non-malignant sort, by considering more in detail its causes, modes of origin, the degree of danger it threatens to life, and the means we can employ for its prevention and cure.

Regarding the causes of benign stricture of the rectum, it is a significant fact that the disease is almost always developed at the lowermost extremity of the bowel, within reach of the finger introduced

at the anus. Sir Benjamin Brodie, a high authority in all questions involving large surgical experience, asserts the rarity of exceptions to this rule.* If in connection with this fact we recall the size and shape of the rectum, the pouched dilatation that exists, except in very early life, just above the sphincter—so suggestive of habitual overstretching of the walls of the intestine and of prolonged contact of its fecal contents, often hard and irritating in their nature, with its internal surface, it is difficult to avoid the conclusion that influences of this kind bear a large share in causing the inflammation of which thickening and contraction are the consequences. I remember a stout and ruddy Irish girl in the wards under my charge some years ago

* "Strictures of the rectum are commonly situated in the lower part of the gut, within the reach of the finger. Are they ever situated higher up? I saw one case where stricture of the rectum was about six inches above the anus; and I saw another case where there was stricture in the sigmoid flexure of the colon, and manifestly the consequence of a contracted cicatrix of an ulcer which had formerly existed at this part. Every now and then, also, I have heard from medical practitioners of my acquaintance, of a stricture of the upper portion of the rectum, or of the sigmoid flexure of the colon, having been discovered after death. *Such cases, however, you may be assured, are of very rare occurrence.* Inquire of anatomists who have been for many years teachers in the dissecting-room, or of surgeons who have witnessed a great number of examinations in the dead-house of a hospital, and they will bear testimony to the correctness of what I have now stated."—(Sir B. C. Brodie on "Diseases of the Rectum," *London Medical Gazette*, vol. xvi., p. 30.)

in the adjoining hospital, with a stricture of the rectum situated about two and a half inches above the anal opening, for which I could make out no other cause than the habit since childhood of retaining the fæces for a week, and often longer. The stricture in this case was diaphragmatic in shape; it consisted of a membranous partition stretched across the cavity of the gut, with a rather narrow circular opening at its centre, through which the first joint of the index-finger could be insinuated with a little force, what we style, when speaking of the urethra, a *linear stricture*—such as would be produced by tying a ligature around a tube with yielding walls. Its edges were sharp, suggesting the use of the knife for their division. In fact, I treated the case in this manner, nicking the sharp edges of the stricture at three or four points, and afterward gently inserting smooth, well-oiled bougies, and gradually increasing their size. The result of the treatment was satisfactory. In this case I have no doubt that local inflammation was caused by habitual over-distention of the rectum, and that the stricture resulted from subsequent contraction of the altered parts.

In the violent efforts often made to evacuate an overloaded rectum, lesions frequently occur at the anal orifice; and there is similar liability to injury

to the walls of the bowel just above, although less in degree, from the action of the levator-ani muscle bruising them against the fecal mass within, which is often hard and unyielding, and sometimes contains fragments of bones and other irritating materials.

The close proximity of the usual seat of stricture to the external opening of the bowel is also suggestive of possible injury from without, and cases are not wanting where contraction has followed the introduction of foreign bodies into the rectum, the manœuvres employed for their removal, and other surgical operations in this locality. I once saw a patient at St. Vincent's Hospital in a desperate plight from stricture, who had lacerated the lining membrane of the rectum some years before in his efforts to get rid of its contents. He had been left in Texas in charge of cattle early in the late civil war, and, cut off from communication, was compelled to subsist entirely on milk, without any vegetable food. As a consequence of the unirritating qualities of this food and the absence of cathartic medicine, his lower bowel became distended with an almost colorless mass of hard, putty-like consistence, to get rid of which he was forced in his extremity to use sticks and such rude means as he could command, and in this manner he caused injuries which

led subsequently to a bad stricture at the usual seat. In this case the stricture was complicated by several fistulæ communicating with the bowel above the seat of contraction, which, as is generally the case, was dilated, and its lining membrane was in a state of chronic inflammation, yielding a free purulent discharge.

Ulceration of the mucous membrane of the rectum, however produced, is liable to be followed by stricture. Ashton relates two cases in which the disease followed obstinate chronic dysentery.* But the comparative rarity of this result is explained by the fact that destruction of the mucous membrane alone is not sufficient to give rise to subsequent stricture unless the deeper tissues of the bowel are involved, especially the stratum of connective tissue underlying the mucous coat: just in proportion as this layer is invaded by ulceration or inflammatory exudation is the danger of subsequent contraction. This opinion is supported by the evidence of Quain† and Cruveilhier,‡ both of whom have ably investigated the subject.

Injury to the rectum received in childbirth from prolonged pressure of the fœtal head, and

* "Diseases, Injuries, etc., of the Rectum and Anus," 3d ed., London, 1860, p. 304.

† *Op. cit.*, p. 185.

‡ "Traité d'Anat. Pathologique," t. ii., p. 231.

otherwise, is an occasional cause of stricture. I had a middle-aged woman in charge at the New York Hospital some years ago, who, after a protracted and difficult labor, had inflammation of the rectum, followed by tedious ulceration, with frequent passages and free discharge of pus, and finally, in the fourth year, by symptoms of stricture which compelled her to seek surgical relief. Here the symptoms of stricture coincided with the period of cicatrization of the ulcerated surface, and were due to the contraction accompanying this process.*

Quain relates a case in which inflammation of the rectum followed the use of a turpentine enema during typhus fever, and terminated in stricture, which, by appropriate treatment, steadily pursued for a long time, was entirely cured.

I saw a lady, with Dr. Quackenboss, who was

* In his "Lectures on Diseases of the Rectum," *op. cit.*, p. 236, Sir Benjamin Brodie describes a condition of the rectum liable to occur in women, most frequently after difficult labor, characterized by chronic inflammation, a copious discharge of mucus and pus, and frequent and painful passages. "If you examine the bowel with the finger," he says, "you find the inner surface of the mucous membrane irregular, as if it were lined with a multitude of small flat excrescences; or as if your finger came in contact with a surface covered with warts." It is generally accompanied by a circular contraction or stricture an inch and a half or two inches above the anus—"which," he adds, "is an accidental and not a necessary accompaniment of the disease."

suffering from extreme obstruction of the bowels, which we found to be caused by a band of contractile tissue pressing sharply upon the bowel from without, evidently the result of a very serious pelvic cellulitis from which she had recently recovered. The sharp edge of this band almost entirely occluding the gut—just as an artery is closed by the needle in acupressure—was just within the reach of a long finger, so that we succeeded in guiding a tube beyond it, and by the judicious use of injections of warm water the bowels were relieved. The systematic use of this palliative measure led to a cure, for I had an opportunity the following year of satisfying myself that the band which pressed upon the bowel had softened down and disappeared, mainly through the restorative powers of Nature. The patient was otherwise in good health, and able to dispense with the enema. This, and the preceding case related by Quain, illustrate a point of importance in the prognosis and also in the treatment of stricture of the rectum, the existence of which is so generally due to the contractile tendency of cicatricial tissue; they demonstrate in fact what we are taught by the principles of surgery, that this contractile tendency is only a feature of the reparative process, and that it will subside and disappear as the process is perfected, leaving behind it only

the contraction inevitable from loss of substance—where loss of substance has taken place. It becomes evident, also, that the inflammation which has resulted in subsequent contraction must have been so severe as to have caused serious injury to tissue, or actual loss of tissue by ulceration or gangrene. Thus, phagedæna, which is so liable to complicate non-syphilitic or soft chancre, is a recognized cause of stricture of the rectum, but rarely encountered except in women of a certain class where chancrous pus flowing from the vagina has inoculated abrasions at the anus, and the ulcers thus produced have assumed the phagedenic character and extended within the bowel. I have seen this result in more than one case in the adjoining hospital. In the male it can happen only under the most exceptional circumstances.

This is the only mode in which any form of the venereal disease is certainly known to occasion stricture of the rectum. True syphilis, to the best of my knowledge, does not cause the disease, except in the rare instances where phagedæna attacks a syphilitic ulcer and extends within the rectum. I mean to say that stricture of the rectum is not one of the recognized manifestations of constitutional syphilis; and I make the statement in this form because the contrary opinion was at one time

quite prevalent among the older surgeons. This doctrine culminated about the period of Desault and John Hunter, at which time mercurial treatment was pretty generally employed in the treatment of rectal contractions. Since clearer ideas have begun to prevail as to what syphilis really is, and the distinction between it and the other contagious sores contracted in promiscuous intercourse—known as simple or soft chancres—is more generally recognized, it has become evident that true syphilis has little or nothing to do with the causes of stricture of the rectum.*

* The starting-point of the phagedenic or destructive ulcerations of venereal origin which are liable to terminate in stricture of the rectum is either *soft chancre*—conveyed from the vagina to the anus—or the *mucous patch* or *condyloma* of true syphilis, of which the anus is a favorite seat. In either case it is the *destruction of tissue* to which the stricture is due, and only indirectly to a venereal poison.

This subject has been studied recently, among the French, by Gosselin, the successor of Velpeau at La Charité ("*des Rétrécissements syphilitiques du rectum*," in the *Archives générales de Médecine*, t. iv., p. 667, 5e *serie*, and "*Dictionnaire de Méd. et Chir. pratique*, 1867, *art. Anus ;* and by Després, surgeon of the Lourcine Hospital —the venereal hospital for women in Paris ("*des chancres phagadéniques du rectum*," in the *Archives générales de Médecine*, March, 1868). I quote Gosselin's conclusion in his own language : "*Le rétrécissement dit syphilitique du rectum n'est point un accident constitutionnel, c'est un lésion de voisinage developpée au dessus d'un chancre de l'anus*"—i. e., stricture of the rectum is not a symptom of constitutional syphilis, but an epiphenomenon.

Després examines this conclusion and indorses it fully, adding that, "with our present knowledge the law can be laid down that

The *symptoms* of stricture of the rectum are referrible, directly or indirectly, to the mechanical obstruction to the function of the bowel which it occasions: at first, simple difficulty in evacuating the fæces, usually described as costiveness; later,

most non-traumatic strictures of the rectum are the result of neglected phagedenic chancres of the anus and rectum." I presume he confines this law to women, as his researches comprise female cases only. Després' fourth case illustrates very clearly the pathological history of stricture of the rectum in the female from this cause.

Both of these authorities decide that specific general remedies—mercury and iodine—are of no avail in the treatment either of the strictures, or of the ulcers in which they take their origin.

The latest German contribution to this subject is the thesis of Freid. Probst, Berlin, 1868, "*Ueber syphilitische mastdarmgeschüre*," containing the autopsies of seventeen cases of disease of the rectum of supposed venereal origin occurring at the Pathological Institute of Berlin, under Virchow, from 1857 to 1868. This writer reviews certain cases published by Von Bärensprung in the Berlin Charité Annalen (sixth year, page 56) of so-called syphilitic ulceration and stricture of the rectum, and, after careful examination, expresses doubt as to their syphilitic character. Of his own seventeen cases there were only two which the author thinks were probably dependent upon constitutional syphilis, and he arrives at the following modest conclusion: "That in order to come to a positive decision about this question the existence of a condylomatous or gummy new formation must be anatomically demonstrated, but in all the cases hitherto observed it has not been possible to do this."

In summing up what is certainly known on this subject we may conclude that there is no form of this disease to which the name of *syphilitic stricture of the rectum* can properly be given, and that, although gummy deposit may possibly occur in this locality as elsewhere, and fall into ulceration, it is probably of very rare occurrence as a cause of stricture; and that stricture, as such, is not amenable to anti-syphilitic medication.

costiveness alternating with diarrhœa. In the earlier stages of the disease the patient is often conscious of a mechanical impediment, and even confident of its existence; and at this period the fæces are sometimes extruded, with straining, in narrowed tape-like coils, as though forced through a constriction. In order, however, to present this latter symptom, which is usually set forth as classical, and pathognomonic of the disease, the stricture must be situated so low down in the rectum that in the act of straining it is pressed before the fecal mass down to the anus, and even beyond it—so that the contents of the bowel are extruded directly through the stricture and take their form from it without coming in contact with the anal orifice. I have actually witnessed this phenomenon, and I have also had a patient describe to me accurately the shape and feel of his stricture which, by straining, he had been able to appreciate with his own finger. When the stricture is situated so far above the anus that what I have just described cannot happen, then the stool will necessarily take its shape from the anal orifice; it will be scanty except when diarrhœa is present, and voided with little force, notwithstanding the efforts of the patient, and followed by no feeling of satisfaction.

The diarrhœa, which is almost invariably pres-

ent in the more advanced stages of stricture, is explained by the fact that the surface of the bowel above the stricture—where it is subjected to dilatation from straining and from prolonged contact of fecal accumulation—is both altered in texture and inflamed, and this surface yields mucus increased in quantity, and catarrhal in quality, and mingled with more or less pus and blood. Thus softened in consistence, the fæces, which constantly tend to accumulate above the obstruction, are enabled, at irregular intervals, to escape through the stricture, with more or less pain of a colicky character, in a sort of fecal diarrhœa. There is also a good deal of flatulence, and a feeling throughout the abdomen of general uneasiness which is apt to be increased after taking food. These latter symptoms are generally characterized by patients as "dyspeptic." The appetite is not necessarily impaired, nor does the patient in every case lose flesh; in fact there is more tolerance than we should expect of a lesion so seriously interrupting an important function. Pain in the hips and over the sacrum is also complained of, but this is not so prominent a symptom as in cancerous disease. In advanced stricture there is liability to abscess in the cellular tissue outside of the bowel, and this generally terminates by forming a fistulous communication between the di-

lated bowel above the stricture and some point near the anus where the abscess has discharged externally. In this tendency to abscess and fistula we recognize the same conservative effort that is so characteristic of old stricture of the urethra—Nature seeming to aim at the establishment of a new route in order to surmount the threatened interference with function in the obstruction of the natural outlet.

There is also discharge of pus from the rectum from ulceration of the stricture in some cases; but this is more frequently provoked by the injudicious use of bougies and other means employed to effect a cure. It is to be distinguished from the purulent discharge from ulcerated surfaces which precedes certain forms of stricture already mentioned, as it possesses a different signification. Still later, symptoms come on of increasing fecal accumulation, with greater and more constant distress, and frequent but ineffectual efforts to secure relief by evacuation—threatening entire obstruction. Under these circumstances rupture of the large intestine above the stricture has occurred, but more frequently ulceration, perforation, and death from peritonitis. The great French tragedian Talma died in this way. I once examined the body of a child who died at two years of age from rupture of

the colon in consequence of obstruction from stricture, the result of congenital occlusion. By an operation shortly after birth I had succeeded in establishing a route for the fæces, but this required to be kept open by the constant use of bougies and tents, which were after a time neglected, and finally relinquished. An enormous accumulation of fæces in the colon followed, and, after a period of entire obstruction, an obliquely transverse rupture occurred at the middle of the descending portion. The fæces resembled hardened putty, and they had not escaped into the peritoneal cavity. Death took place by convulsions, no obvious marks of peritonitis having as yet developed themselves.

I should judge, however, that in by far the largest proportion of those cases in which benign stricture of the rectum leads to a fatal termination death results from exhaustion, after protracted suffering, in which chronic diarrhœa from extension of morbid action in the bowel above the obstruction forms the most prominent feature. Cases occur in which fistulous communication takes place, through the intervention of abscess, between the bowel above the stricture and the urinary bladder. This complication is attended by much additional suffering, fecal matter finding its way into the bladder, passing habitually with the urine and

causing great irritation from cystitis. I saw a case of this kind some years ago in a Hebrew gentleman, one of the few instances in which I have been unable to reach the stricture with the finger. The diagnosis and treatment were both unsatisfactory, and the case did badly. I was not permitted to examine the parts after death, and the question of the presence of cancer was, therefore, unanswered.

Stricture of the rectum, then, is a grave disease; generally traumatic in its origin, tedious and painful in its progress, and showing little tendency to spontaneous cure. It remains to be seen how far it is susceptible of relief and cure by surgical treatment. There is a certain analogy between its prognosis and that of urethral stricture: we cannot hope to do away entirely with the tendency to contraction in a canal whose walls, at any point, have been converted into cicatricial tissue; but we can so control the contractile tendency as to prevent obstruction, and thus ward off interruption to function. Both Curling and Quain record cases of cure to this extent; and my own experience justifies me in expressing the opinion that, in benign stricture, with judgment and skill on the part of the surgeon, and docility and perseverance on that of the patient, life may be indefinitely prolonged. I will go further: if the case be taken in hand early, there is

always room for hope that it may be cured entirely. But before passing to this division of the subject I have a few remarks to make concerning its diagnosis.

When not within reach of the finger the *diagnosis* of stricture of the rectum is necessarily obscure and difficult. No bougie, nor ivory ball mounted upon flexible whalebone—the best substitute for the urethral *bougie à boule*—can with certainty demonstrate the presence of a stricture in the rectum. The name given by the elder anatomists to this portion of the intestinal canal was not intended to convey the idea of the straightness of its course—for this is very far from a right line, but of the greater parallelism of its walls—so different from the succession of pouches formed by the walls of the colon. Now, this tendency to pouching still exists in the rectum, although in a less degree; and in the living body the half-formed septa or partitions between the rudimentary pouches often project into the cavity of the bowel sufficiently to arrest the progress of a bougie or rectum-tube. These are the rectal folds described by Houston, of Dublin. Again, the walls of the rectum in the adult, when not distended, lie in loose folds—from which, in some cases, it is not easy to disengage the extremity of the finger in digital exploration; and these also

would be liable to be carried before the end of a bougie, and thus convey to the surgeon the idea of obstruction as by stricture. The practical difficulty of insinuating a rectum-tube beyond six or eight inches is caused by the presence of these curves and folds. That they often give rise to error in the diagnosis of stricture I am confident, for I have met with no less than three patients who were diligently using means of cure for strictures which had no existence in reality. One of these, a gentleman of great intelligence, had been carrying around with him for years an assortment of bougies, the possession of which excited my envy. I had some difficulty in persuading him to forego their use, but he did so, and remains well. I would remark here that the muscular walls of the rectum, like those of the bladder, are liable to fall into a state of *atony* —often miscalled *paralysis*—from overdistention. I am persuaded that this condition is a very frequent cause of the costive habit—the difficulty in evacuating the lower bowel which leads so many to the constant use of laxative medicines. This habitual difficulty in defecation, attended by a sensible loss of power in expelling the contents of the rectum, is suggestive of stricture, both to patient and physician, and you must not allow it to lead you astray. Hysterical women, gouty hypochon-

driacs, oxaluries, and young males whose nervous sensibilities are perverted by ungratified sexual desire, are apt to take kindly to the idea of stricture of the rectum, and sometimes develop a partiality to the use of instruments of which it is not easy to rid them. Beware of too hasty diagnosis in these cases. There was an irregular practitioner at Bath, in England, toward the close of the last century, who possessed the curious faculty of persuading his patients that all their ailments were due to stricture of the rectum, and who, in the language of a contemporary warning a friend against his wiles, threatened to have half the quality of England using rectum bougies. Within a week after his arrival at the watering-place the incredulous mentor was himself diligently using a bougie.

In regard to the *treatment* of stricture of the rectum, dilatation is our most available and effective resource. It should be carried out on the same principles that guide us in treating strictures of the urethra by this method, and by similar instruments—such as I here show you. Bougies for the rectum should be smooth, conical at the extremity, and of half a dozen different sizes—increasing by easy gradation from the size of the largest urethral bougie to the diameter of an inch and a half. They should be introduced and passed

through the stricture always with the greatest gentleness, keeping in view the general direction of the rectum and the curve of the sacrum. A bougie should not be left in the rectum in contact with the altered parts more than fifteen or twenty minutes; for, if its presence gives rise to irritation or inflammation, the object for which it is employed will be defeated. It is sufficient, in most cases, to introduce the bougie every second day.

The bougie does good in two ways: first, by simple mechanical dilatation or stretching of the contracted tissues; second, by stimulating vital absorption of the recently-organized material which constitutes the substance of the stricture. Now, just in proportion as inflammation may be caused, by violence in its introduction or the too long retention of a dilating bougie, this process of vital absorption by the stimulus of pressure is likely to be prevented; and possibly new inflammatory exudation and thickening might be provoked, and the existing disease aggravated. Therefore use the bougie with all gentleness, and do not introduce it too often; nor let the patient retain it too long —an error which is likely to be committed.

To aid the process of dilatation the knife may be employed with advantage in certain cases, most obviously where the stricture is diaphragmatic,

linear, or bridle-like, and situated near the anus, but only to the extent of very limited incisions at different points in the contracted circle—nicking, as it were, the most resisting portions of the stricture, and following immediately by the bougie.

I see no reason why the process of forcible dilatation to the extent of laceration of the stricture which has succeeded so well in the urethra should not also be applied, within judicious limits, to the treatment of stricture of the rectum. In fact, Weiss's speculum ani, which I here show you, has been employed for this purpose. But in any such attempt great caution must be observed, and the possibility of fecal extravasation and pelvic cellulitis and abscess is to be kept in view. These dangers would be also likely to attend the too free use of the knife.

I know of no local medication of value in the treatment of this disease—always excepting anodyne injections or suppositories, as palliatives to pain. The best material to facilitate the passage of the bougie is simple cerate, or cold cream—the *unguentum aquæ rosæ* of the pharmacopœia. Medicated pledgets of lint kept constantly in contact with the stricture are still employed in the French hospitals; and so also, I presume, by some —in deference to lingering traditions of the past—

is mercury, and the iodide of potassium, its modern substitute. I need not repeat that this treatment is not founded upon sound pathology, and that the latest and best experience has proved that it is unavailing. Your main reliance is the judicious use of dilating instruments, with such hygienic management and employment of general remedies as the requirements of the case may suggest. They should be used systematically, with great gentleness, and their use persevered in for a long time; for it is only through the changes in the nutrition of the altered parts that come with time that a permanent cure may be hoped for. Undoubtedly, as in the urethra, the more thoroughly the stricture is dilated, the greater the chances of permanent cure.

The use of the bougie should be relinquished gradually, by lengthening the interval of its application; watching, meanwhile, if the tendency to contraction has disappeared; but it will rarely happen that it can be given up entirely. Throughout the treatment, and afterward, every precaution should be employed to keep the fæces soft and unirritating, and to prevent the possibility of violence to the parts by straining. The influence of change of air from the city to the country in causing full and free evacuations from the bowels, and in ob-

viating costiveness, is worthy of more notice than is usually accorded to it. There is no more potent aid than this when we desire to stimulate the vital powers to full and perfect repair, and to bring about permanent restoration to health. I think we are more prone to seek out the resources of art for our physical troubles than to employ the remedies which Nature offers us.

LECTURE VII.

CANCER.

We have now reached a subject the consideration of which I would gladly forego, for it involves a detail of hopeless suffering which terminates inevitably in death. For the cure of cancer our science and art are powerless, and we can offer but scanty means of relief by which its progress may be resisted and its symptoms palliated. This disease has been styled the *opprobrium medecinæ*—the disgrace of medicine; how justly I may not say. The profession of medicine has already rendered great service to humanity, and we have reason to feel confident that, sooner or later, a remedy will be found for this malignant pest of our race. I think it better honestly to recognize the unwelcome fact that this long-desired remedy has not as yet been attained, for in so doing we place ourselves in the best attitude for future effort in search of it. I

trust it may fall to your lot to welcome the discovery—perhaps to make it.

The principles of surgery teach us that the essence of the disease popularly known as cancer consists in a perversion of the nutrition and growth of our tissues whereby a new form of material makes its appearance in place of the natural healthy substance of the body, usually in the shape of an outgrowth or tumor. There are certain parts of the body especially liable to this sort of morbid growth as, for example, the uterus and the mammary gland of the female. The lower end of the intestinal canal is a locality which it often selects. In the statistics made out by Tanchou, comprising over 9,000 cases, cancer of the rectum stands fifth in point of frequency.*

Almost invariably making its appearance as a new outgrowth, cancer, when it invades the rectum, usually tends to obstruct the calibre of the canal. Although the new growth is more or less rapid, its vitality is essentially weak; and its natural course is to fall sooner or later into a condition of ulcera-

* The total number of cases in Tanchou's "Memoir on the Relative Frequency of Cancer," presented to the French Academy, is 9,118. Of these 2,996 were of the uterus; 2,303 of the stomach; 1,147 of the female breast; 578 of the liver; and 251 of the rectum. —(Walshe on Cancer, with additions by Warren. Boston, 1844, p. 347.)

tion or molecular gangrene attended by watery and bloody discharges, and to terminate life by local increase through involvement of neighboring tissues and a general contamination or poisoning of the whole organism. Hence the symptoms of cancer of the rectum usually present themselves in the shape of obstructive growths or tumors, attended by unnatural, sanious, or bloody discharges. Difficulty in defecation, or costiveness, with its attendant distress, and, perhaps, the protrusion at the anus, while straining, of something that exudes more or less bloody discharge, lead to the impression on the part of the patient that he is troubled with piles; and, at first, this impression may be shared by the medical attendant. Later, increasing difficulty in evacuating the contents of the bowel causes suspicion of the existence of more serious trouble, possibly of stricture; and it is only after passing through these phases of doubt and uncertainty, which may occupy months, that the increasing urgency of the symptoms compels a surgical exploration, and the true nature of the affection is finally discovered. Meanwhile, however, there is in most cases a marked alteration of the patient's general health, suggestive of the graver character of the existing disease; and it is this circumstance which has usually led to a more thorough investigation.

Loss of flesh and strength, poor appetite, and unsatisfactory sleep, with a sallow complexion and an unnaturally frequent pulse, are the most frequent evidences of failing health in this disease; and if to this you add complaint of pain between the hips, and of dyspeptic or dysenteric symptoms, with an expression of countenance indicating anxiety and habitual distress, you will have a group of symptoms very characteristic of cancer of the rectum.

With these general indications of the existence of serious disease you will find, on local exploration, that the lower end of the bowel, almost always within reach of the finger, is reduced in its calibre, that its walls are thickened, sometimes uniformly, but more frequently by lumpy masses which have a hardish, nodular, cartilaginous, or warty feel. It may be that there is only one of these tumors, and that it is seated on one side of the gut, in front, or behind—the walls of the bowel feeling elsewhere soft and natural; but more frequently the finger receives the impression of passing into a more or less irregularly contracted circle or ring. The exploration is almost always painful, for the parts are much more sensitive than in other diseases of this region of a benign character; but it cannot properly be dispensed with. Where the seat of the disease is beyond the reach of the finger you will

be compelled to rely upon the character of the discharges and the general symptoms which the case presents, as evidence of its existence. There is not unfrequently glandular enlargement in the groin; and you will sometimes be able to detect secondary cancerous deposits in the shape of nodular eminences along the anterior margin and upper surface of the liver, or general enlargement of this organ, and, perhaps, evidences of the presence of the disease elsewhere. You should not neglect to feel carefully in the iliac fossæ, particularly the left, for cancerous growth or tumor involving the upper portion of the rectum might be recognizable from this quarter; but bear in mind, also, that the sigmoid flexure of the colon is liable to be distended with solid fecal accumulation where there is obstruction in the rectum below.

When the middle portion of the rectum is the seat of the disease, and it cannot be recognized by exploration either from below or above, deep-seated pain over the centre of the sacrum is a significant symptom.

Each of the varieties of cancer is encountered in the rectum—the *epithelial*, *scirrhous*, *encephaloid*, and *colloid;* and, as to comparative frequency, about in the order in which I have enumerated them. An old man came to my clinique some years ago with

a superficial patch of epithelial degeneration involving about one-third of the anal orifice; it was the exact counterpart of the same form of disease as it occurs in the lip. But the disease is not found so commonly at the anus as an inch or two within the cavity of the bowel; nor is it so liable to involve the anus by extension from within, as it is to extend upward. The epithelial variety, with scirrhus, and the intermediate phases of cancer-tissue, comprise a large proportion of the cases of the disease as it occurs in the rectum; and these are the longest in running their course. A lady died recently under my observation in the fifth year of an epithelial cancer just within the sphincter. In this case there was great distress from obstruction due to a general contraction of the walls of the bowel. The disease commenced on one side and extended completely around the gut, and then advanced upward. As the contraction increased, little nodules of cancerous material seemed to grow out from the walls of the bowel, some of which became pedunculated and were subsequently detached to make room for the passage of fæces. When the obstructive symptoms had reached a point which seemed almost unsurmountable, ulceration took place into the vagina, and great relief was experienced by their free escape through

this route. This feature of the disease, which is not uncommon in women, seemed to me to prolong life. In men ulceration occasionally takes place into the bladder, and this complication adds greatly to the suffering which attends the disease. The encephaloid form of cancer occurs in small rounded masses which are deposited in the layer of fibrous tissue beneath the mucous membrane of the bowel. As these masses grow, the mucous membrane covering them becomes infiltrated with the morbid material and falls into ulceration. Sometimes a mass of soft cancer outside of the bowel grows so large as to obstruct the passage by its pressure. Such a mass lying in front of the rectum might be mistaken for the fundus of the uterus. This form of the disease runs a shorter course. Dr. Bence Jones reports the case of a lady who died in little more than a month after the first symptom of the disease, with suppuration in the pelvis; there were found in the rectum nodules of soft cancer extending over a surface nearly four inches in length.*

The average duration of cancer of the rectum is about two years and a half.†

* Transactions of the Pathological Society of London, 1848–'49, pp. 65, 66.

† The mean duration of cancer of all varieties is 27.14 months. —(Walshe on Cancer, Am. ed., Boston, 1844, p. 127.

Death is liable to occur in various ways, perhaps most frequently through exhaustion by suffering, the vital force having been already sapped by the cancerous cachexia. The complication which most frequently precipitates the fatal issue is peritonitis from fecal accumulation—often from ulceration and perforation, more rarely from rupture.

I would remark here that when perforation happens in that portion of the rectum not invested externally by the peritonæum it gives rise to pelvic abscess, terminating usually in fistulous openings near the anus; and cases in which this complication has occurred sometimes present themselves for treatment as for fistula in ano. It is hardly necessary to say that under such circumstances the operation for fistula is inadmissible.

When the obstruction from cancerous deposit has become so considerable as to form a tight, narrow stricture of the bowel, this constricted passage is liable to become plugged by a little mass of hardened fæces, or some hard undigested substance accidentally present in the bowel, and in this event the patient may die rapidly with symptoms of acute obstruction resembling those of strangulated hernia. The walls of the bowel above the stricture have generally lost more or less of their contractile power from habitual overstretching, so that a very

trifling increase of the obstacle may, in this manner, prove fatal. A plum-pit has been found to cause obstruction in this way, and I have here on the table a wax preparation representing a portion of the bowel of an old gentleman who died with symptoms of internal strangulation; you see a cherry-stone acting the part of a ball-valve in a tight cancerous stricture of the transverse colon.*

Where fecal accumulation has existed for a long time death may take place by slow poisoning from absorption of deleterious material through the lining membrane of the bowel. According to Amussat the celebrated Broussais died in this way, twenty-one days having elapsed since the last free evacuation before the fatal event. In Broussais's case the walls of the rectum were infiltrated with encephaloid material, and throughout its progress there were fungous growths which Amussat removed on several occasions by ligature. The starting-point of the disease was the anterior wall of the rectum just opposite to the prostate, and among the earlier symptoms was the protrusion of a smooth nodule covered by mucous membrane which was at first supposed to be hæmorrhoidal. There was also,

* This case occurred in the practice of my colleague, Prof. James R. Wood, M. D.

especially at first, a good deal of irritability of the bladder, entirely due to the proximity of the cancerous disease, for the prostate and bladder were found to be healthy.*

* Relation de la Maladie de Broussais, etc., etc., par J. Z. Amussat, Epernay, 1845.

The following classical case is taken from the proceedings of the New York Pathological Society, published in the *Medical Record*, July 15, 1870, p. 231:

The president of the society, Dr. Hutchison, exhibited a specimen of stricture of the rectum, removed from the body of a lady thirty-five years of age. She came under his observationon, the 19th of January last, with the statement that for the previous eight months she had suffered from considerable distress in the lower bowel, manifested by pretty constant tenesmus and a discharge of a sanious fluid per anum. Otherwise she appeared to be in excellent health. An examination was made per rectum, when a narrow rim of deposit was discovered on the left half of the intestine about three inches from the anus. On the right side of the bowel and behind it, apparently in the subcellular tissue, another mass was discovered of the same consistency. In referring to her history, no hereditary predisposition to cancer was discoverable, neither had there been at any previous period any attack of dysentery or other inflammation of the gut. There was also no reason to suspect syphilis. The diagnosis of malignant disease was made, and she was informed accordingly. Some two or three weeks subsequently she consulted Dr. Van Buren, who found that the rim then extended entirely around the rectum. Some four weeks after his first examination Dr. H. made a second, when he found the whole circumference of the gut involved. So close had become the stricture, that it was impossible to crowd the finger through it. At that time she had had no evacuation for seven days. He began to dilate the stricture with a No. 12 urethral sound, and went on increasing the size of the bougie until the largest size was reached. This was not followed by any considerable discharge of fecal matter. She suffered a great deal from pain, and, indeed, experienced no relief whatever. She was not examined again until after her death, which took place five

Cancer of the rectum is a disease of middle or advanced life; but it is occasionally met with earlier. I saw a boy of twenty-one in the adjoining hospital not long since, in whom the disease afterward involved the bladder, as was observed in the dead-house. He had a large, hard lymphatic gland at the inner border of the groin, within the tendon of the adductor-longus muscle. Mr. Busk reports the case of a boy who died at sixteen with acute peritonitis from cancer of the rectum.*

weeks after the last examination, during which time nothing passed her bowels, she being kept comfortable by opium.

As she had expressed a wish not to be buried until the fourth day, a *post-mortem* examination was not made until that time. The body was well preserved on ice. On opening the thorax two yellowish white spots on the lower portion of the right lung were found, presenting the aspect of medullary cancer. There was also a smaller nodule in the lower lobe of the left lung, otherwise the two organs were entirely healthy. The heart was also normal. On opening the abdominal cavity, the colon was seen distended with fecal matter from three inches above the caput coli to the point of stricture, the greatest accumulation being at the junction of the ascending and transverse colon, at which point there were numerous adhesions to surrounding parts. The stricture, three inches above the anus, extended upward, involving about two and a half inches in breadth, and was so close that water could only pass through very slowly by drops. There were some deposits over the bladder, some in the liver, spleen, and right kidney, which was considerably larger than the left. The pancreas and stomach and uterus were normal.

In conclusion, he stated that the operations for excision of the rectum and lumbar colotomy were respectively discussed, but it was deemed inexpedient to employ either—a decision well borne out by the autopsy.

* The disease formed a stricture three or four inches from the

According to the general testimony of the best observers cancerous disease originating in the rectum is less liable to make its appearance secondarily in other organs, than primary cancer developed in other localities. Nevertheless the cases are not very rare in which secondary deposits have been found after death in the liver, where we should expect to find them. Quain records a case of a lad of twenty-one, who died with ascites, for which he was tapped, in whom there was nodular cancerous infiltration of the peritonæum including the mesentery with the great and small omentum.*

Among the *diagnostic* marks of this disease is a bloody discharge from the anus, often slight, occurring not only at stool but in the intervals so as to soil the linen. It is not pure blood, as from a hæmorrhoid, but of a sanious, greasy, mixed-up character, brick-red and paint-like. The discharge from an ulcerated benign stricture is more purulent. It is not always easy to distinguish the *feel* of malignant disease, although the touch usually affords the most reliable evidence of its nature. An old hæmorrhoidal tumor hardened by repeated

anus, very tight, and accompanied by ulceration of the mucous membrane. The stricture was caused by a large deposit of "medullary sarcoma," external to the muscular fibres of the gut.—(Proceedings of the Pathological Society, London, 1846–'47.)

* "Diseases of the Rectum," New York, 1855, p. 256.

attacks of inflammation will sometimes communicate a very suspicious sensation to the finger; and the elevated and indurated edges of an irritable ulcer of long standing have, to my knowledge, led to the expression of a more serious opinion than the real nature of the case justified. Probably the excessive pain of the irritable ulcer influenced this opinion. The tubercular, warty surface which the rectum not unfrequently presents when affected by chronic inflammation must not be mistaken for malignant disease, although its persistent, intractable character is very suggestive of cancer.

I was once consulted in the case of a young lady who suffered habitually from almost insuperable difficulty in evacuating her bowels. I found a spherical soft solid tumor the size of a billiard-ball in contact with the anterior wall of the bowel, and this tumor, which was more or less movable, was evidently forced backward and downward against the sacrum whenever she assumed the squatting position, in such a manner as to obstruct the passage somewhat as a ball-valve. I thought at first that it was cancerous; but on further examination I recognized a fibrous tumor developed in the posterior wall of the uterus by the weight of which this organ was dragged out of its place—in fact retroverted.

The *pain* which attends cancer of the rectum is usually very constant and characteristic; at first merely an unpleasant sensation as though there were something yet in the bowel to be voided, it becomes afterward wearing and intolerable rather than acute and severe, often involving the sacrum and hips, and extending down to the thighs. When the cancerous growth is large, there is also sharp, lancinating pain from stretching of nervous filaments; and, where ulceration exists, it is gnawing in character. And yet the disease has been known to reach an advanced stage without its existence even having been suspected. Brodie tells of a very old lady whom he was requested to examine because her servant insisted that she passed her stools from the vagina instead of the rectum, although she could not be induced to believe that there was any thing wrong, as she suffered no pain nor inconvenience. He found the rectum entirely blocked up by a cancerous growth, with extensive ulceration of its anterior wall into the vagina.*

The description I have given you of cancer of the rectum would be incomplete if I did not draw your attention to the fact that there are exceptional cases in which the disease does not obstruct the function of the bowel, the evacuations continuing unimpeded

* *Op. cit.*, p. 238.

to the end of life. These exceptions to the rule are rare, and they are explained by the early occurrence of ulceration by which the calibre of the bowel is kept open, or by the fact that the disease involves only a portion of its circumference. At the same time it is to be recognized that the obstinacy of the constipation in this disease is not always in proportion to the narrowness of the passage, nor does it seem to be entirely due to the mechanical obstruction which so generally is present. As in the case of Broussais, to which I have already referred, there may be room enough for the fæces to pass, and yet they are obstinately retained. There seems to be defective contractile effort in the muscular walls of the intestine above the seat of disease, due possibly, in some degree, to overdistention, but not entirely, for free spontaneous evacuation almost always follows when the obstruction is removed, as by an artificial opening of the bowel.

We come next to the consideration of the means by which we may palliate the symptoms of this pitiless disease, and resist its fatal tendency. The statistics collected by Walshe would seem to justify his inference that cancer is favored by crowded cities and by civilization. It would be well, then, to secure for a patient the more vitalizing influence of country air and a simple, natural mode of life.

Plain and well-selected food, nutritious in quality, and easily digestible, is of the utmost importance. Study to avoid whatever occasions flatulence, or seems to disagree. I have always been partial to a milk diet as far as practicable in these cases; all that can be said against it is that it rather favors constipation. Seed fruits and vegetables containing much woody fibre are to be especially rejected. Well-made soup, bread, eggs, tender and juicy beef and mutton, sweet-breads, plainly-cooked game, farina, custard, green peas, potatoes, cream, and butter, constitute well-selected fare; in short, that form of food should be sought which contains the greatest amount of nutritive material with the least fecal residue. As for stimulants, no rule can be given; you must observe carefully in each case if they agree, and advise accordingly. On the whole, I should be suspicious of harm from their use, save with great moderation. There is no objection to the moderate use of tea, coffee, or cocoa. Whey, in its different forms, is an excellent drink.

Next, as to the means of securing regular and satisfactory action of the bowels with as little pain as possible, which, to a person suffering with cancer of the rectum, is usually the great business of life. The articles of diet commonly recommended for this purpose—fruits, cracked wheat, grits, mush, oat-

meal-porridge, bran-bread, and bean-flour biscuits—too often occasion distress and flatulence. I have seen more comfort derived from the judicious use of laxatives. Of these the gentler alkaline salines in combination with sulphur and aromatics, and, perhaps, with senna or jalap in small quantity, have rendered the most reliable service, in my experience. The last-mentioned drug has seemed to me to liquefy the contents of the large bowel with less irritating effect than any other of the powerful vegetable cathartics. It is certainly hydragogue, but in small doses unirritating, and well borne for a long time. This remark applies to its use in small quantities as an addition to other laxatives. Castor-oil is always reliable. Aloes is apt to irritate the rectum, and is therefore inadmissible. The laxative mineral waters generally oppress the stomach. But of all means of securing action of the bowels the use of warm unirritating injections of flaxseed, catnip, or hop tea, to provoke discharge by gentle distention of the bowel rather than by stimulation, is the most satisfactory—either alone, or to assist the action of laxative medicine. The tube of the injecting apparatus should be perfectly smooth, and longer than that usually employed, so that it may be insinuated if possible beyond the diseased portion of the bowel. The tube used for

vaginal injections is often preferable for the bowel; or, where the stricture is considerable, a flexible urethral catheter—perhaps with a stylet of leaden wire to fill up its eyes. In all manipulations of the diseased parts, whether for this purpose or for exploration with a view to diagnosis, the greatest gentleness must be observed, or you will do your patient more harm than good. Hæmorrhage may follow, and increase of irritation pretty surely will. There is a good deal of the *noli me tangere* about the disease—the less it is handled the better. The employment of bougies for dilatation, in stricture caused by cancer, is a measure which has no curative value; it is rarely advisable, except in extreme fecal accumulation, to facilitate the passage of tubes for injection, and then they must be used with the utmost caution. The removal of fungous growths when they block up the passage is sometimes admissible, and the ligature or the "*écraseur*" is best employed for this purpose.

For the relief of pain there is no resource of any permanent value but opium in some of its forms; all of the other anodynes soon lose their effect, and we are forced to rely mainly upon this. But its use must be deferred as much as possible, and judiciously managed, for it retards digestion, provokes flatulence, increases the difficulty in getting the

bowels to act, and, in its secondary effects, increases the sensibility to pain. It agrees with some patients much better than others, and this circumstance will influence you in recommending its use. Chloroform tends to disorganize the blood, and cannot be used habitually with advantage.

Can surgery do any more than medicine for the patient's relief? Is it ever justifiable to undertake the removal of the disease by a surgical operation? In the milder varieties of the disease—those known as epithelial or cancroid, and where its limits can be entirely circumscribed by the finger—this can be done without danger to life; and, where it is causing great distress from stricture, it is proper to consider whether the entire removal of the disease may not afford relief and prolong life. Mr. Curling records some cases, the results of which would seem to justify us in recommending the operation under these circumstances.* The subsequent contraction and stricture at the orifice, even after entire removal of the anus and several inches of the bowel, has been sufficient, with simple dressing, to prevent fecal incontinence, and not enough to occasion serious obstructive trouble. Experience furnishes us with these facts. But the relief, if attained, is

* "Observations on the Diseases of the Rectum," London, 1863, p. 154, *et seq.*

only temporary. The disease will return, generally within a few months, and, in its later phases, epithelial or cancroid disease usually takes the shape of scirrhous or cerebriform cancer. As a last resource, when the patient's condition is desperate, or where the disease is cerebriform, this operation is not to be thought of. Under these circumstances, where no relief can be otherwise obtained, and the occlusion seems to be complete, and the fecal accumulation increasing, surgery has still another resource to offer in the establishment of an artificial outlet or anus—either by seeking the sigmoid flexure of the colon through the peritonæum near the groin, as first proposed by Littre in 1710, or by opening the ascending or descending colon from behind, in the lumbar region, where the large intestine is not invested by the peritonæum, as suggested nearly a century later by Callisen, of Copenhagen. It is a curious fact that neither of these surgeons performed the operation known still by his name. A French surgeon, Pillore, of Rouen, was the first who carried out Littre's proposition. In 1776 he opened the cæcum near the right groin in a man of sixty-two, who was dying from unsurmountable obstruction of the bowels caused by a cancerous stricture at the junction of the rectum and the sigmoid flexure of the colon. The patient

was relieved, and survived nearly a month, dying from peritonitis caused by the presence of two pounds of metallic mercury which had been given to overcome his constipation, and which was found after death in a loop of small intestine carried by its weight down into the pelvis, where it had given rise to the fatal inflammation.* Littre's operation was subsequently done a number of times, with varying success, mostly in infants with imperforate anus, until Amussat, in 1839, revived and modified the operation upon the colon in the lumbar region suggested by Callisen, and performed it in a few years on no less than six adults, under circumstances of extreme obstruction, with results so satisfactory that his mode of operating has since been generally preferred. Prof. Valentine Mott, who saw more than one of Amussat's cases, while in Paris in 1839, spoke in terms of strong commendation of the merits of his operation. But, although Callisen's operation, as modified by Amussat, has been performed in the larger proportion of the cases on record up to the present time, still Littre's operation through the peritonæum has its advocates, and in view of the constantly-varying phases of

* Amussat, "Mémoire sur la possibilité d'établir un anus artificiel dans la région lombaire sans pénétrer le péritoine," Paris, 1839, p. 85.

disease it is as well to give absolute preference to neither, but to be prepared to meet the requirements of a case by either operation. The question will be more likely to present itself to you in the case of a newly-born infant with an undeveloped anus, and here, after failure to reach the bowel through the natural route by the perinæum, the weight of authority is rather in favor of Littre's operation. On the other hand, in the graver cases of obstinate constipation from obstruction by disease in the lower bowel, whether cancerous or otherwise, the greater success has followed the operation of lumbar colotomy—the name by which Amussat's proceeding is now generally known. So that, to bring this subject to a close, the practical question for you may be summed up in these terms: Will it become my duty to undertake an operation for artificial anus in a case of cancer of the rectum threatening life by obstruction of the bowel? I would answer: If there are no obviously contraindicating circumstances, it will be your duty to propose the operation, and to perform it if permitted. If not prepared to do the operation yourself, get the services of the best practical surgeon within your reach. The best test of preparation for this sort of professional work is to have already done the operation on the dead body, if not

on the living. The archives of surgery contain sufficiently numerous examples of lives temporarily saved and indefinitely prolonged with comfort and gratitude on the part of the sufferer, to expose you to just criticism if you should fail to offer your patient the chances afforded by this operation.*

* A typical case in which great immediate relief and a year's life were secured by the operation of lumbar colotomy, under circumstances of insuperable obstruction by cancerous disease of the upper part of the rectum, in a lady of thirty-five, is reported by Mr. Adams in vol. xxxv. of the "Medico-Chirurgical Transactions," London, 1853, p. 57. In the same volume are to be found two very instructive cases, reported by Mr. W. J. Clement, of Shrewsbury, England, which will repay perusal; and a case by Mr. A. Baker, of Birmingham, England, in which the patient's life was prolonged two years by Amussat's operation in the descending colon. During this time she enjoyed perfect health, took care of the artificial opening without assistance, and suffered but trifling inconvenience from its presence.

All these cases, with others to the number of forty-eight, comprising all the authentic reports of the operation for artificial anus up to February, 1852, are collected and analyzed in a paper of great practical value by Mr. Cæsar Hawkins, surgeon to St. George's Hospital, and president of the Royal College of Surgeons of England, in the same volume of the "Medico-Chirurgical Transactions," p. 85. To these Mr. Curling (in his work on "Diseases of the Rectum," already quoted, p. 171) adds seven additional cases, making in all fifty-five cases in which this operation has been performed upon adults for intestinal obstruction up to the year 1863.

LECTURE VIII.

DIAGNOSIS — MEANS OF EXPLORATION — NEURALGIA—ATONY—IMPACTED FÆCES—HYGIENE—SPECIAL THERAPEUTICS.

A most important consideration in connection with diseases of the rectum is their accurate *diagnosis*. The means to be employed in order to recognize these different affections promptly and certainly are worthy of our best attention. You will readily call to mind the instances I have already mentioned in which *eczema of the anus* has been denominated "pruritus," and *irritable ulcer* miscalled "neuralgia;" a symptom in either case having been mistaken for the disease—the true nature of which not being recognized, failure in its cure was the natural result. In like manner, benign *stricture* and *irritable ulcer* have been called "cancer," and patients with curable diseases thus abandoned to unnecessary suffering. Accurate diagnosis is in our profession the unerring test of

ripe scholarship and thorough education, and of all the qualities of a physician it is that which most certainly insures success in curing disease and consequent reputation. Imperfect diagnosis, in truth, is a very common fault, especially so, perhaps, in the class of ailments which we are studying; for the seat of them, in the decency of Nature, is hidden away as it were in a recess of the body, and natural modesty is always averse to exposure. Moreover, our means of exploration have been, until recently, very defective—entirely insufficient to overcome satisfactorily the jealous sentinelship of the sphincter-ani muscle.

The different varieties of the speculum ani which I here show you are ingenious in construction and possess a limited value in their application, but all practical surgeons have experienced a want of full success in their use in exploring the rectum. The sphincter ani is a powerful muscle and resists their dilating power except under the profound influence of chloroform or ether; and the use of a speculum ani, except under the anæsthetic influence, generally occasions a great deal of pain. Anæsthesia, then, is a most valuable aid in rectal exploration.

The position in which the patient is placed is also a circumstance of great importance in facili-

tating a view of the interior of the bowel. I was early impressed with the ingenuity and great value of Marion Sims's mode of placing his patient in his operations upon the vagina, and I have employed the same position with great advantage in exploring the rectum. With a patient under the full influence of an anæsthetic, on a table of proper height and in a good light, the trunk of the body in the prone position with outspread arms and the hips properly elevated so that the intestines gravitate toward the diaphragm, I have often, by the aid of Sims's speculum vaginæ alone, obtained an excellent view of the whole internal surface of the rectum as high up as its termination in the sigmoid flexure of the colon. The chair employed for uterine examinations, where the pelvis can be elevated or depressed at will, is admirably adapted for this purpose; for thus, by a proper management of the light, its rays may be thrown to the bottom of the cavity presented by the bowel, and the presence of air pumped in and out by the diaphragm, as the intestines lie in contact with this muscle, keeps the walls of the gut distended and in full view.

Here, then, in anæsthesia and position, according to my experience, we have the means at our command for thorough exploration of the rectum; and with the necessary tact in their employment

they will be found, I believe, entirely adequate to the purpose. With ether—a Sims's speculum, a fenestrated wire hook, and a pair of long forceps armed with cotton wool, are all the instruments required.*

Of course, such thorough exploration is not required in the majority of cases. For affections of the *anus* and its immediate vicinity it will often suffice to place the patient in a good light, with the body flexed forward and resting on the elbows, and the knees unbent. Then, by separating the buttocks and gently forcing asunder the margins of the anal orifice by means of the thumbs, you will get a good view of the radiating plaits, and of the festooned line of junction of skin and mucous membrane, and possibly recognize the lower margin of an irritable ulcer; or, by urging the patient gently and repeatedly to "bear down, as though at stool," you may gain sufficient relaxation of the levatores and sphincter muscles to secure, perhaps, the protrusion of a hæmorrhoidal tumor. You will be able always, in this way, to form an opinion as to the condition of the mucous membrane of the

* I once used a modification of Sims's speculum vaginæ for the exploration of the rectum described in the "Transactions of the New York Academy of Medicine," vol. ii., p. 181, but practice has since satisfied me of the uselessness of multiplying instruments.

lower end of the rectum, to recognize the presence of an eczema, or, perhaps, the orifice of a fistula.

Then, there is a great deal to be learned by the touch. To use the finger with advantage for this purpose, employ some mild ointment very freely; common sweet-oil is not sufficiently lubricating, and the complaints of a patient seriously interfere with the object of your exploration. By directing the finger from behind forward you will gain on the antero-posterior curve of the bowel, and by pushing with force and burying your knuckle in the perinæum, you may reach a distance of four or five inches from the anus. Amussat adopted the expedient of getting a friend to push his elbow, and thus gained a little more. If, while you are reaching thus as far as possible, you encourage your patient to bear down forcibly against your finger, as though at stool, you might possibly bring down in contact with its extremity a stricture, or tumor, or altered surface, situated as far as six inches from the orifice of the gut. You may feel a polypus, distinguishing it by its narrow pedicle and its tendency to elude the finger; but you cannot with certainty recognize a hæmorrhoidal tumor by the touch. In its ordinary soft, spongy condition, when not strangulated by the sphincter, you will hardly be able to distinguish a hæmorrhoidal tumor from

the soft surface of the bowel which, just within the anus, is puckered more or less into folds; but, on the other hand, when indurated by repeated attacks of inflammation, it may give you the idea of a fibrous tumor, or even of something worse. You may be able to detect the orifice of a fistula by the touch, within the grasp of the sphincter, or just above, where such orifice is most generally to be found, and it will give you the sensation of a little softish, warty elevation. Of course a foreign body, or impacted fæces, or a stricture, or an altered surface near the anus, are all readily recognized; but when it is a question of a tumor outside of the rectum, or supposed perhaps to be embedded in its walls, remember the fact that the uterus and the prostate are both readily tangible from this quarter. In case of any difficulty in distinguishing either of these organs from a tumor, the introduction of a uterine, or of a urethral sound, will settle the question. A stricture which is not sufficiently tight to embrace the finger like a ring is not always easily recognizable, although situated near the anus, especially when there is no considerable thickening or hardness of the part involved which is appreciable by the finger. In the case of a lady, whom I saw recently with my friend Dr. Emmet, I had satisfied myself, by ocular inspection

and by the touch, of the existence of a recto-vaginal fistula just at the sphincter, and of an unnatural sense of heat in the rectum, but of nothing more. As these lesions did not fully explain the symptoms, I solicited a fuller exploration. When under the influence of ether, and in proper position, Sims's speculum was introduced and gently drawn toward the coccyx, and now a distinct ring with a sharp edge started out from the vaginal aspect of the bowel about two inches above the sphincter. The speculum was carried around on the opposite side, so as to press the wall of the rectum against the vagina, and immediately the sharp-edged fold became equally visible, projecting from its coccygeal aspect. To the finger in contact with this thin edge it conveyed the impression of a linear stricture, but when the speculum was withdrawn it no longer received this impression, nor could it recognize any thing abnormal save the sensation of heat. There was unnatural redness as well as increased sensibility and heat, and more or less purulent secretion, and I therefore felt justified in the diagnosis of chronic inflammation of the rectum, with commencing stricture.

A whalebone instrument, terminating in a spherical or olive-shaped ivory ball, constituting a sort of bulbous bougie, such as is used in examining

the urethra, has been recommended for rectal exploration. But a better contrivance than this is a hollow, flexible rectum-tube, terminating in a ball with an orifice at its summit. By attaching an india-rubber injecting apparatus to the other end of this tube, so as to be able to throw a stream of tepid water or flaxseed-tea against any fold of the bowel by which its progress might be impeded as it is gently pushed onward, you have the best apparatus, both for exploration beyond the reach of the eye, and for administering an enema effectively under circumstances of obstruction. It is well to remember that in the normal condition of the bowel a rectum-tube cannot often be passed beyond eight to twelve inches from the anus—in most cases not so far. Where there is any suspicion of cancerous degeneration the greatest gentleness in manipulation must be employed, for instances are not wanting in which tubes and bougies have been thrust through the softened wall of the gut, causing rapidly fatal peritonitis.*

* Curling (*op. cit.*, p. 151) says: "In a hospital case of cancerous stricture, rather high up, in which I directed the tube to be employed as occasion required, the dresser, on the third or fourth time of using it, unfortunately passed the tube through the soft carcinomatous mass, and penetrated the abdomen, causing the patient's death in twelve hours."

The following case (*New York Medical Journal*, June, 1870, p. 449) is also worthy of permanent record. It shows the danger of

I have now pretty much exhausted the time at our disposal for the consideration of diseases of the

perforation of the bowel by instruments even where there is no cancerous degeneration:

"At a recent meeting of the Pathological Society of this city, Dr. Sands presented a specimen of melancholy interest from the fact that the intestine was perforated in an attempt to dilate a stricture of the rectum. The patient, a gentleman past the age of forty-five, consulted him two years ago with stricture of the rectum from which he had suffered for three years, . . . a very tight and obstinate stricture about three inches from the anal orifice. It was only after two weeks had elapsed that an ordinary olive-pointed urethral bougie could be passed. Larger ones were used after a time, and these gave way to rectal bougies, and finally one was constructed of gutta-percha, ten inches in length, with the curve corresponding to that of the intestine, having an olive point, stiffened by a watch-spring. This was introduced, on an average, twice or three times a week. During his absence from town, Dr. Sands intrusted the case to the care of a medical friend, who, however, was not in the habit of introducing it as he had done—its whole length. On one occasion the patient became aware that it was not inserted as far as he had been accustomed to have it, and informed the attendant of the fact. He became so importunate that the instrument was passed its full length. No difficulty was encountered, and no undue force was used. Immediately after it was withdrawn, and before the patient left the house, he complained of pain in the lower part of his bowels. As this was not an unusual occurrence, no special attention was given to it, and he was simply advised to take a little laudanum. He jumped into a stage and rode down town, but soon began to feel very badly, and was seized with a rigor. He then returned home and immediately sent for the physician. That gentleman saw him the same day, Thursday, and on Friday Dr. Markoe was called in consultation, and it was not until the Saturday evening following, forty-eight hours after the accident, that Dr. Sands visited him. It was then evident that peritonitis existed; the diagnosis of perforation of the rectum was made, and death occurred on the following morning at four o'clock.

rectum, and shall only mention summarily two or three other points which seem to me to possess practical importance.

The mode of exploration I have just described will enable you with a good deal of certainty to detect the lesion in most cases of so-called *neuralgia* of the anus, but you may, possibly, encounter an example of pure *nervous pain* for which there is no local cause. In such case you must seek for its explanation in sympathetic or reflex irritation which has its origin in some other organ—the uterus, the ovaries, or perhaps in the brain; and you will find your remedy in searching for the remote cause of the affection, and in such measures as tend to improve the health of the whole organism. Hysteria will present itself not unfrequently as the cause of this

"On examining the rectum after death, the stricture was found to be five inches in length, and caused by a condensation of the tissues of the gut at that point. As had been previously diagnosticated, no cancerous disease was found. About ten inches from the anus there was found a perforation *through healthy tissue*, and corresponding in size to that of the point of the instrument. There was an ancient adhesion of the peritoneal surfaces of the sigmoid flexure, in such a way as to render the angle at that point very acute. This inflammation was thought to have been caused at one time when the passage of the instrument by Dr. Sands had been attended by very sharp abdominal pains. After this he had used the instrument with more caution. It was very evident, taking this view of the case, that while the whole length of the instrument could be passed previously without danger, after the adhesion occurred it was very easy to produce the perforation."—*Medical Record.*

as well as of many other local neuralgic complaints; and also the condition called by some oxaluria—which is simply a phase of nervous gout, in which the blood is poisoned by badly-assimilated food and drink. In cases of this kind do not waste your time upon local remedies, but employ all your ability and tact in correcting the faulty habits of life which have brought about the condition of health of which the so-called neuralgic pain is only a symptom.

There is a condition described in the books as *atony of the rectum*, in which the muscular coat of the intestine has lost its contractile power in a greater or less degree, and the ability of the patient to expel the contents of the lower bowel is consequently impaired. This affection is not a true paralysis from loss of nerve-power, but a local impairment of muscular contractility. It is not an uncommon ailment, belonging rather to mature and advanced life, and it affords an explanation of the cause of costiveness in many cases. It is brought about by sedentary habits, neglect of the calls of Nature, and consequent habitual overdistention of the muscular walls of the gut; in some cases by too constant or extravagant use of injections.

The observance of regular habits, the use of a dinner-pill containing aloes and extract of nux

vomica to assist in establishing this necessary condition, and perhaps the administration of a tonic internally with minute doses of strychnia in combination, constitute the best remedies for this malady.* The injection of a gill or two of cold water after each stool, as a temporary measure, would also assist in restoring the lost tone of the muscular fibre; but a regular daily visit to the water-closet is the *sine qua non.*

As a consequence of habitual costiveness you will occasionally meet with an accumulation of hardened fæces in the rectum—most likely in an elderly female, which will require surgical aid for its removal. There is little use of administering

* A prescription which has been very useful to me, especially in women, is as follows:

℞. Ferri sulphatis exsiccati.
Quiniæ sulphatis, āā ℈ij.
Ext. nucis vomicæ.
" aloes, āā gr. xij. Pil. xl.

S. One three times a day.

These pills are known to many New York apothecaries as the *Pil. quatuor*, a name given them by the late Benj. Canavan, one of our best pharmaceutists.

I have also used with advantage for many years the following formula for a dinner-pill, originally, I believe, a prescription of my friend Prof. J. T. Metcalfe, M. D., and known as the *Pil. Salutis:*

℞. Ext. aloes.
" hyoscyami, āā ʒj.
" nucis vomicæ, gr. iv.
Ol. anisi, gtt. iv.

M. s. a. ft. pil. No. lx.

cathartic medicine in these cases of *impacted fæces* after the impaction has taken place, and you will easily recognize the condition when aware of the possibility of its occurrence. The hardness of the mass is so great that the action of a laxative will make no impression upon it; indeed, after its presence has been recognized in the rectum, it would be unwise to employ cathartics. Nor is the effect of injections into the bowel more successful; even the diluted ox-gall, which has been recommended as a solvent of these semi-calculous concretions, fails in disintegrating them. The proper and only course to pursue is to break up the mass by careful manipulations with an appropriate instrument, and the best for this purpose is a lithotomy scoop, or the handle of an iron tablespoon, and then inject with soap-suds, or tepid water; repeating this manœuvre until there is nothing left that will escape through the anal orifice. This is a disagreeable operation, and there is no escape from it, but its result is usually highly satisfactory.

And now I have but a few words to add concerning the *hygiene* of the rectum—that is, how to preserve the health of this part of the body, and to avoid the diseases I have been describing. This is a subject in regard to which great indifference, even ignorance, prevails. You must have remarked how

many of these complaints seem to have had their origin in carelessness and neglect, through ignorance. The individual who sits straining to get rid of the contents of his large bowel is not aware of the damage he is doing to the parts which he is subjecting to violence, and how surely he is courting prolapsus or piles, if not abscess or fistula. In disregarding the calls of Nature few persons recognize the danger they incur of loss of expulsive power from overdistention and consequent costiveness from atony, of inflammation, stricture, and abscess.

Let us glance for a moment at what anatomy teaches us of this.

The muscular coat of the rectum consists of a layer of internal fibres which circle around the gut, and a layer of external fibres which run in the direction of its length. The circular fibres grow larger and more powerful as they approach the lower end of the bowel, and just above the external sphincter muscle they are collected into a mass of some volume to which the name of *internal sphincter* is given. A large proportion of the external longitudinal fibres when they reach this ring double around its lower border, passing upward and inward to seek an insertion into the fibrous substratum of the mucous membrane of the gut,

where they are firmly implanted. From this arrangement it results that when, in the act of defecation, these longitudinal fibres contract, they tend first to draw down and then to evert the mucous membrane of the lower end of the rectum—just what we see happen in the horse. When the evacuation of the contents of the bowel takes place naturally, this protrusion is promptly retracted by the action of the *levatores* and the natural contractility of the parts; but when the evacuation is difficult or impossible, and the effort is prolonged or frequently repeated, the protruded mucous membrane becomes congested and swollen and is retracted with more difficulty—perhaps a portion of it remains outside, and then the tumid and tender protrusion leads to the announcement on the part of the patient that he has "an attack of the piles."

Now, this is only a part of the system of complex and delicate machinery by which Nature provides for the perfect accomplishment of this most important function—a function which we cannot regard as ignoble, since the great Architect of the Universe has made it a condition of life and health in all animated beings. It is our duty, then, to teach those who intrust their health to us how to care for themselves intelligently in this matter, and thus to avoid pain and sickness; for preventive

medicine takes rank before curative medicine, inasmuch as it requires a wider scope of knowledge and involves a greater exercise of power. The regular performance of this function is, then, one of the primary conditions of physical well-being, and its derangement is recognized as one of the first evidences of a departure from perfect health. Its periodical fulfilment should be insisted upon, for periodicity is one of Nature's favorite habits; and this should be solicited with gentleness, and the danger of straining or violence should be inculcated even from earliest childhood. If the evacuation cannot be accomplished by moderate effort, then the cause of this unnatural phenomenon must be sought for and removed; for no person is "naturally costive," as the popular belief and mode of expression would seem to imply. Meanwhile the morbid condition must not be allowed to persist and become habitual, but it is to be palliated by the simplest and gentlest means by which the end can be accomplished. Mild laxatives, dinner-pills, and enemata are the palliative remedies; but judgment and regularity in the selection and use of food, and, above all, the correction of evil habits of life—without which costiveness, except as the result of obvious disease, does not exist—are the real means of cure, which should always be pre-

ferred to drugs. As to *special therapeutics*, there are certain substances which seem to exercise a direct influence upon the rectum. Thus, aloes stimulates the desire to go to stool by a certain irritating effect upon the mucous membrane of the gut, and this quality gives the drug great value in the frequent cases where the sensibility of the bowel is sluggish; but, on the other hand, contraindicates its employment whenever an oversensitive or inflammatory condition is present. For this reason aloes is the principal ingredient in all so-called "dinner-pills." Sulphur has a certain value as the most unirritating of laxatives. The sedative influence of the sulphuretted hydrogen extricated during its passage through the intestinal canal possibly explains this quality. Hence it is employed, alone or in combination with other mild and efficient laxatives, when opening medicine is required at the same time that the rectum is irritable or inflamed. Sulphur and confection of senna constitute the "lenitive electuary" formerly so much in use. Other drugs, such as cubebs and black pepper, have the singular quality of leaving a cooling sensation in the rectum after having passed through it, and have a certain value in this way. Ward's paste—the *confectio piperis nigri* of the pharmacopœia, praised by Sir Benjamin Brodie,

has had a somewhat exaggerated reputation as a remedy for piles. Copaiba, also, possesses some specific virtue in diminishing inflammation of the rectal mucous membrane, and is worthy of careful trial in those cases of chronic inflammation which precede and accompany stricture. In atony, and the paresis which attends some injuries and affections of the spinal cord, electricity and cold both possess a considerable degree of power in stimulating the contractility of the muscular coat of the rectum, and the latter, in the form of the cold enema, is especially useful in its influence upon the walls of weak and overdistended hæmorrhoidal vessels.

And now I must bring my lectures on the diseases of the rectum to a close. I have endeavored, as you will have observed, to make them suggestive, rather than exhaustive, leaving the application of the principles I have laid down, and the further details of practice, to the clinical demonstrations you will receive in your daily visits to the Bellevue and Charity Hospitals.

THE END.